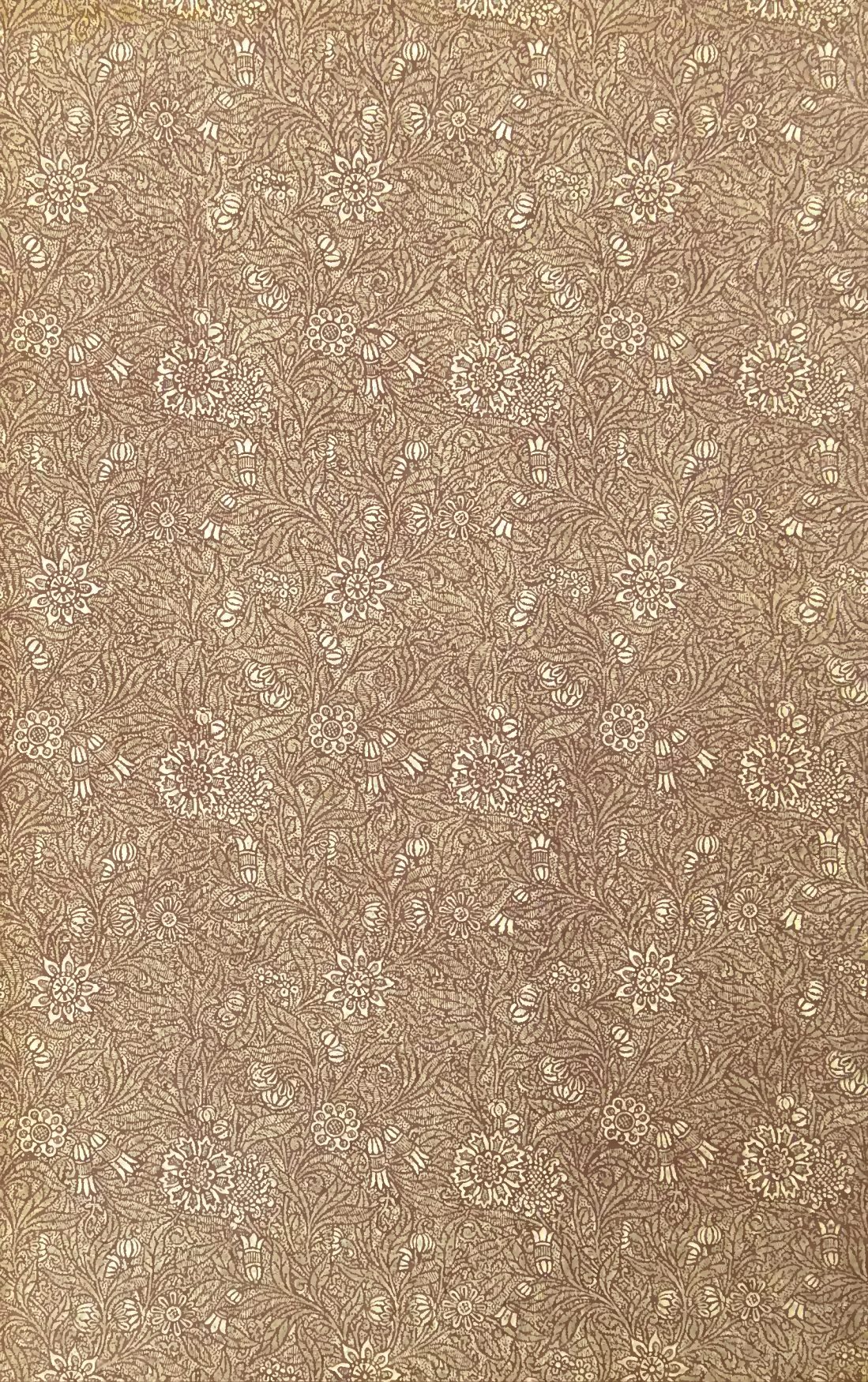


Health Resorts
for
Tropical Invalids
Moore







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HEALTH RESORTS
FOR TROPICAL INVALIDS

By the same Author.

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HEALTH RESORTS FOR TROPICAL INVALIDS

IN INDIA, AT HOME, AND ABROAD

BY

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PREFACE.



MUCH of the following Notes was compiled for insertion in a fourth edition of the author's 'Manual of Family Medicine for India ;' but it was found the bulk of that work would thereby be too much increased. The original Notes have, therefore, been somewhat amplified, and are now published as a separate volume.

There is not, it is believed, any other publication affording even a bird's-eye view of the sanitary stations of India. While all have been reported on officially, and while handbooks and guides have been prepared for some localities, no previous attempt has been made to give the principal characteristics of each place under one cover.

Similarly, although numerous books have been written on one or other, or on one or other group, of the Health Resorts of Europe, there is no one work affording the information to be found in the following pages.

Several hill stations in India, which are purely military and not public resorts, have not been included. Many small continental and British resorts are also not referred to. The idea has been to give such cursory accounts of the principal sanitarium at home and abroad as will, if not always enabling the reader to determine on a suitable position, yet indicate that locality concerning which more information is desirable—information only to be procured from more expensive and often local publications.

Lastly, it is remarked that the volume is not intended as a handbook excepting in its relation to climate.

W. J. M.

BOMBAY: *July* 1881.

CONTENTS.



CHAPTER	PAGE
I. HEALTH RESORTS IN INDIA	1
II. TROPICAL MARINE SANITARIA	70
III. HEALTH RESORTS ABROAD	74
IV. HEALTH RESORTS AT HOME	144
INDEX	193

HEALTH RESORTS.

CHAPTER I.

HEALTH RESORTS IN INDIA.

THE principal Hill Stations in India (not including some purely military hill cantonments) are Abbottabad, Almorah, Dalhousie, Darjeeling, Dharmsala, Cashmir, Kusowli, Murree, Mussooree, Naini Tal, Simla. Then there is Pachmarhi in the Central Provinces; Mount Abu in Southern Rajpootana; the Nilgherry Hills in Madras; and Mahableswar, Matheran, and Khandalla, in the Bombay Presidency.

The whole may be divided, sanitarily, into *extra-tropical* and *intra-tropical* mountain climates, the stations in the Himmalayas belonging to the former class, the remainder to the latter. All hill climates, except Cashmir, whether within or without the tropical line, are characterised by a summer season from ten to twenty degrees cooler than that of the plains; by heavy monsoon rains accompanied by much mist and damp (rendering Mahableswar and Matheran in the Bombay Presidency uninhabitable during this period); by glorious autumnal weather; and in the *extra-tropical* stations by a winter season much colder than that of

the plains, with usually heavy falls of snow about the month of January. On the *intra*-tropical ranges of hills, the cold season is not so severe, and the changes of temperature are much less than on the Hinmalayas, where the thermometer is influenced by cold winds from the snowy regions of the north. The Nilgherry hills especially, from their altitude, their proximity to the equator, and their nearness to the sea, offer a cool climate, famed for evenness of temperature, and consequent salubrity. The climate of all hill stations is, however, modified by neighbouring physical conditions, and the same mountains or even the same station may afford localities differing much in climatic characteristics. All have excellencies and defects, and many invalids have something special or peculiar in their ailments or constitution demanding special consideration and medical advice with respect to the choice of a suitable climate. But the very common error of expecting Indian hill climates to cure all kinds of disease should not be entertained. As a rule it is only those cases of ill health when no specific disease exists, which are benefited by the change to the hills. Unfortunately there is no model climate capable of curing all kinds of disease, and no country or locality can boast of perfection in this respect. In India the one great thing desirable from change of climate, is to get away from a heated, debilitating atmosphere; and an easterly wind even, so that it lowers the temperature, is not unfrequently regarded by healthy persons with satisfaction! Climates in Europe are spoken of as relaxing, sedative, exciting, or bracing, according as the locality presents certain characteristics of dryness, humidity, and temperature; but in India, the two great distinctions of hot and cool, and the paramount necessity of coolness,

scarcely admit of much attention to those more subtle variations, to be considered with regard to the more changeable European climates. Thus the value of Indian hill ranges is limited to those conditions, in which simply a cooler atmosphere may be expected to be beneficial. When there is specific disease, as of the liver, or bowels, or spleen, contracted in the tropics, a more radical change is necessary than to a tropical mountain climate. When there is *tendency* to such specific diseases, or to chest affection, and a more radical change cannot be taken, *intra-tropical* stations are preferable, although not always advisable. But when the ailment is simply debility from heat, or from continued work, or convalescence from some malady which has merely left debility as a result, or when the complaints are of lassitude, loss of appetite, exhaustion after little exertion, and loss of energy and inclination for the daily occupation, *any* hill climate almost at any time will prove beneficial. By such change the spirits are exhilarated, the appetite and digestion are improved, the vital powers are stimulated, and the physical vigour is regained. Residence in the hills may moreover be regarded not only as exciting a sanitary effect on the body, but also on the mind; the freedom from the harass of daily work, and the change of scene and society, tending to raise and exhilarate the spirits, depressed by the continued influence of the heated plains.

Here a few words are ventured as protest against writers who have portrayed the climate of India as not inimical to Europeans generally, and as even favourable to European children, and who have even advised life assurance at European rates. Without reference to those tropical epidemic diseases which so often ‘strew

with sudden carcasses the land,' and to the dangers from which all Europeans are liable, it is asserted that the Indian climate solely from the exposure to prolonged heat which it entails is inimical to the European constitution. Subjection to continued heat has a direct impairing influence over and above the inertia consequent on such conditions of life. In several different manners (well known to medical men) continued heat injures the digestion, debilitates the system, and degenerates the blood. This deterioration, although sometimes slow, is certain, and commences in the majority of instances from the date the European enters the tropical plains. Men with a large amount of vital force and strength withstand the enervating influences longer than others not so endowed, but the time at length arrives when deterioration does occur. As a general rule, during the hot weather of the plains of India the Briton is not himself at all. The Indian climate throws its net over him, and struggle as he may he must yield to its embrace. Nature seems then in conspiracy to dull energy, weary the brain, and weaken the body; in short, to render both men and women idle and to demoralise them, for a jaded mind soon attends a jaded body. It is only by a periodical escape from the influence of the plains that the majority of Europeans can retain both mental and physical health and vigour. Every mile the traveller advances from the plains into the hill ranges is eloquent of that change of climate which will so soon produce a change of health. Vegetation, animal life, and even the appearance of human beings alter gradually, but distinctly. As elevation is attained, the air feels first lighter, then crisp, then exhilarating as champagne, the immediate relief experienced being a foretaste of the improvement soon

to replace the waning colour, depression of spirits, and deterioration of health occurring to so many residents on the plains.

Much care, however, is necessary to guard against the effects of chill consequent on the change to the lower temperature of the hills. The sudden impression of the colder air checks the action of the skin, and the blood being driven within on internal organs, any weak part suffers from the strain. It should be recognised that although there is a comparative immunity from liability to cholera, dysentery, sunstroke, and malarious disease in the hills, there is usually a greater tendency to chest and throat affection, to neuralgic maladies, and rheumatism, and on some hill ranges to diarrhœa. Children taken to hill climates without special regard to clothing, are very liable to throat or chest affection, or to diarrhœa, from which they may never have suffered on the plains. Warmer clothing should be put on *before* completing the ascent of a mountain—or directly altitude affords a change of temperature—and not after the ascent is made. However warm the hill climate may appear to persons fresh from the plains (who frequently declare it to be ‘as hot as below,’ although never reversing the declaration when they go down), the change of temperature involved if made without care is fraught with danger. A very frequent effect of the colder climate of the hills is an increased amount of urine, and when this occurs it should be accepted as a warning that too great impression is being made on the skin, which requires warmer clothing. On the other hand, precautions against exposure to the sun must not be neglected. It should be remembered that the low temperature of the Indian hill ranges is due more to elevation than to latitude.

The rays of the sun shining with great fierceness through a rarefied air, are at some seasons of the year nearly as powerful as experienced on the plains; and especially so at the intra-tropical stations, where the latitude is less northerly, and the sun's rays more vertical than at the Himalayas.

To obtain the same mean temperature as in England it would be necessary that about 9,500 feet should be ascended in places south of lat. 20° ; between 20° and 26° , 9,000 feet; between 26° and 30° , 8,700 feet; and north of lat. 30° , 8,500 feet. Speaking generally, however, an elevation of 5,000 to 6,000 feet will afford over the whole of India a mean annual temperature about 10° higher than that of England, and about 12° lower than that of the Indian plains. The hill climates may thus be regarded as both semi-tropical and semi-temperate, and are therefore climates in which the diseases of both tropical and temperate zones meet and may flourish. On the other hand, the hill climates, owing to the pure atmosphere, are so excellent, that attention to ordinary general sanitary measures, and to individual hygiene, will suffice to reduce the prevalence of both classes of disease to a minimum not obtainable in the tropical low countries, or scarcely even in the temperate zones.

Lastly, a word of caution is desirable on another point. Whatever change of climate is taken, the change alone should not be trusted to. Medical management should be continued, and personal and general hygiene should be still studied. It is from discarding such means that many do not obtain that relief from change which they expected to result.

The principal hill stations of India are now briefly described, in their capacity as health resorts.

Abbottabad.—The locality is a small, irregularly shaped valley of the Western Himmalayas, having an area of about thirty square miles. It is almost surrounded by mountains covered with pine forests, the summit of one called Thundiani, about fourteen miles distant from the station, being nearly 9,000 feet high. The height of the valley of Abbottabad itself is about 4,000 feet, that of the inhabited part being 100 feet higher. The station of Abbottabad is forty miles from Murree, and the road passes over ranges of hills known as ‘The Gullies,’ on which there are some private bungalows. The soil is alluvial clay overlying a stratum of pebbles. The station is situated on elevated sloping ground, and is well drained. It is divided into a civil and military portion. In the latter there are barracks for two infantry regiments and two batteries. In the civil station there are about a dozen bungalows. The climate is very cold from December till the end of February, snow falling every year with a northerly wind. In the summer the temperature may reach 90° in the shade; but it is frequently moderated by a northerly breeze which sets in at 10 A.M. and continues during the day. In spring and autumn the climate is described as a fine English summer. July and August are the rainy months, but the annual rainfall seldom exceeds 46 inches, and there are showers every month, except October and November. Vegetation is very abundant, fruit trees, roses, and flowers of many kinds growing in profusion. The water supply is from wells, good and abundant. Owing to sudden changes of temperature, which occur more or less at all seasons, and to northerly winds, Abbottabad is trying to weakly persons, especially if delicate about the chest, or if subject to any form of rheumatism or neuralgia.

The summer temperature is also too high for persons who need a bracing climate, although affording great relief from the heat of the plains to those affected with slight or functional forms of bowel or liver complaint, for whom the colder climates of more elevated regions would be unsuitable. With attention to diet and clothing, such cases, as also most instances of debility, either arising from fever or other causes, do well.

Abu.—Mount Abu is a mountain in the native state of Serohi Rajpootana, detached from the great Aravallis range, from which it is separated by the valley of the Western Banass river. In shape the mountain is long and narrow, being about 20 miles in extent at the base and 14 at the summit, the breadth of the latter being from 2 to 4 miles. Abu is the head-quarters of the Rajpootana Political Agency, the site of one of the Lawrence Asylums for European children, and a sanitarium for European soldiers. It is 45 miles from Deesa, and 420 by rail from Bombay. The last sixteen miles from the Abu road station, which is eight miles from the foot of the hill, may be accomplished on horseback or by janpan, but a carriage road is now under construction.

The Abu mountain is composed of igneous granitic rocks, with occasional veins of blue slate and quartz. The highest point, called 'Guru Sikr,' or 'the Priest's Pinnacle,' consists of a vast mass of darkling granite, and is 5,700 feet above the sea; but the station has only an average elevation of 4,000 feet above sea-level, and some 3,200 feet above the plains below. The elevation of the western aspect especially is very abrupt. There are two roads up the mountain, one on the abrupt western face of the hill from the village of Anadra, entailing four miles of very steep ascent, as the

path is constructed in a succession of zigzag turns on the precipitous hill side. The other road, already mentioned, on the south-eastern declivity, is less steep, but longer from the railway station. The traveller when ascending the mountain can hardly fail to be impressed with the grand and beautiful scenery. The gigantic blocks of granite rock towering on the crest are especially striking, worn into fantastic shapes by the weather, or hollowed into caves in which birds of prey take their abode. The summit of the mountain overlooks in places an absolute precipice of four or five hundred feet descent; while on the western side are the plains of Serohi and Marwar stretching off to the Runn of Kutch, only broken towards the north by a range of hills on the Marwar border. On the eastern side there is the Banas Valley separating also from the Aravallis range, in which direction, on a clear day, a vast expanse of mountainous country is visible.

The inhabited part of Abu is a wide hollow or basin perforated by ravines, studded with hills, and surrounded on all sides at a distance of two or three miles from the centre with much higher eminences, from the bases of which several gorges descend precipitously to the plains. The numerous hills, valleys, ravines, bold and grotesquely shaped granite rocks, with here and there large trees, as jambool, burr, pepal, mango, and in some places date palm, afford very picturesque and changing scenery. The delights of the landscape are furthermore enhanced at some seasons by magnificent cloud masses, and by the notes of the cuckoo, or by the singing of the so-called Abu 'thrush,' which birds precede the first monsoon mists; also by the luxuriance of the jasmine, the dog rose, and numerous other flowers and creepers characterising the local flora. At the close of

the rains the place is gay with many-coloured butterflies; while during the rains fire-flies abound. It is indeed at the commencement and termination of the monsoon that Abu appears in its most charming aspect, everything being delightfully green, flowers abounding, and every valley having its running waters, which are more or less dry during the hot weather. On the western side of the station is a lake nearly two miles in circumference, formed by a bund built across a ravine leading to the plains. The charming view of this lake from various points presents islands and palm trees, high mountains more or less thickly wooded rising on both sides, and a glimpse over the bund and across the plains of other distant hills.

The mean annual temperature is 70° ; the extreme summer heat in the shade is 98° ; but this is comparatively seldom recorded, 92° being the usual excess. In the winter, water left outside in a dish freezes, and hoar frost covers the ground. But the daily temperature is very equable, and the station is in some degree protected from the winter easterly winds. The rainfall is variable, but averaged during ten years 64 inches. During August, the most rainy period, the hill may be for days enveloped in clouds; but this does not prove unhealthy, provided care is taken in drying clothing and bedding. The summer is certainly warm; unless in comparison with the burning sandy plains below, as the elevation is only just sufficient to convey the resident above the hot winds, although not always above the fine dust they raise. Abu, however, affords a most agreeable change from the furnace-like hot-weather heat of the Rajpootana and Guzerat plains. For, although hot in the sun, the heat is generally tempered in the summer season by a refreshing breeze;

there is a lightness and elasticity in the atmosphere never enjoyed at such time on the plains, and the nights are cool. Bowel complaints do not occur as on some of the Himmalayan stations, and bronchial complaints are rare ; but from the middle of October to the end of the year the climate is malarious. This probably arises from the numerous basin-like depressions in the impervious granite rock, some of large extent, and all more or less filled with alluvial soil, and from which there can be no escape of moisture except by evaporation. Persons at all subject to fever should avoid Abu at this time, which is the period of the year when there is most change between the temperature of the day and night; and when frequently easterly winds prevail, both exciting causes of fever. At other seasons almost any malady, excepting confirmed forms of bowel and liver complaint, will be benefited. Other drawbacks to Abu are the water supply, and the impossibility of procuring fresh beef. The water, although of good quality, is uncertain in quantity, many of the station wells running dry in the hot weather, when people have to send long distances to other sources in the neighbouring valleys. Cattle are not allowed to be slaughtered in any part of the native State of Sirohi, in which Abu is situated; killing kine being contrary to the tenets of modern Hinduism, so that residents are confined to mutton and fowl diets, both indifferent and expensive unless home-fed. With the opening of the railway the excellences of Abu will doubtless become more appreciated by those requiring a dry, tonic climate, without great cold or vicissitudes of temperature. The railroad may also be expected to diminish that passive opposition on the part of the Serohi Durbar authorities to the development of Abu, who cannot

much longer, in the face of advancing civilisation, consider the hill so holy as to be desecrated by the customs of Europeans.

For the convalescent there is not much amusement at Abu. There is a small club; and sambur, jungle fowl and spur fowl are to be found on the mountain sides, but the pursuit involves great labour. Bears, sometimes tigers, and panthers often, have been shot near the station. The places of interest are the Jain temples near the barracks, the 'Gai Mukh' half-way down the hill and reached by a long flight of difficult steps; Achilgurh and its temples, four miles distant; and the highest point of the mountain 'Guru Sikr,' about eight miles from Abu. At present there is little accommodation for visitors, the number of houses being limited.

Almorah.—The station of Almorah in the Kumaon district is on a rocky ridge sloping down east and west to two mountain streams, the Kosi and the Sawul. Almorah is 30 miles north of Naini Tal, from which it is easily reached. Otherwise the railway brings passengers to Bareilly, whence a dâk gharry runs a distance of sixty-five miles in nine or ten hours to Rambagh at the foot of the hills. From Rambagh to Almorah is about forty miles, which may be ridden or travelled in palkee. There are comfortable dâk bungalows at every ten or twelve miles. For sick officers and their families there are at Almorah several Government bungalows (under the charge of the Commissioner of Kumaon) at a small rental. There is also a public travellers' bungalow; while in and around Almorah there are numbers of good houses moderately priced. Almorah is the head-quarters of one of the Goorkha regiments.

The surface of the ground consists of coarse micaceous rock with veins of quartz cropping out. The elevation varies from 5,300 to 5,500 feet. The average rainfall does not exceed 30 inches, and there is much less fog and damp than at the neighbouring station of Naini Tal. The highest recorded temperature is 88° in May, and the lowest 36° in January, but usually the extremes are not so great. In January and February snow often falls in the station, and always on the neighbouring higher mountains. The drainage, from the physical formation, is excellent, and the sanitary condition is satisfactory. Water supply is good from springs. Edible vegetables are somewhat scarce, but other supplies plentiful and cheap. Some of the neighbouring hills are well wooded, but there are not many trees on the ridge on which the station is situated, owing to its bare rocky character, although the number has been increased during recent years. From the comparative want of shade the surface vegetation becomes burnt up in the hot weather, and the rocks reflecting the heat raise the temperature of the air above that of localities of similar altitude where there is less rock and more shade. If the rains are late in commencing, the station becomes unhealthy from continued heat, and especially so for European children, who are liable to bilious fevers and bowel complaints. Those finding Almorah unpleasant at the height of the hot season may visit Binsur, a hill about twelve miles to the north, which is 2,000 feet higher, richly wooded, the temperature being from six to twelve degrees lower, and where there are several houses. After the rains set in, Almorah becomes cool and generally remarkably healthy. The cold weather is bracing and healthy; but occasionally, when much rain falls, the damp and cold

give rise to bronchial and rheumatic affections. Excepting in the cold weather, chest complaints, neuralgia, and rheumatism are very uncommon, and at all times patients recover rapidly from weakened conditions, the result of prolonged residence on the plains. Chronic forms of indigestion are usually benefited. Excepting at the period and under the contingency of late rains, as referred to above, children thrive especially well.

Cashmir.—The following rules for the guidance of travellers visiting the dominions of his Highness the Maharaja of Jummoo and Cashmir, having received the sanction of his Excellency the Governor-General in Council, were published for general information in the 'Punjab Gazette' of March 28, 1878:—

1. The Punjab Government no longer issues passes for visitors to Cashmir.

The number of military officers in Cashmir *at one time* is restricted to 200. The disposal of passes for this number, less a certain number reserved for the Punjab Frontier Force, is with his Excellency the Commander-in-Chief. Frontier Force officers desiring to visit Cashmir must apply to the Brigadier-General commanding.

Civilians and military officers in civil employ, but a small proportion of whom under the leave rules can visit Cashmir the same season, do not require any passes; but they should report their intention to travel in Cashmir to the Assistant-Secretary, Lahore, and can obtain at the Secretariat Office, Lahore, a copy of the rules to which they must conform.

2. There are four authorised routes for European visitors to Cashmir:—

First.—The principal road from the plains by Bhimbar and Rajaori, over the Pir Panjal range. This

route may be varied by leaving the main road at Thana Mandi and proceeding *viâ* Punch and over the Haji Pir Pass to Uri. The route just mentioned is 147 miles, and there are twelve rest-houses on the road at intervals of 8 to 12 miles, where mules and coolies may be obtained. The second route is 187 miles, also made in twelve marches, the first five marches to Thana Mandi being the same. In ordinary seasons the Pir Panjal route is impracticable until May, and is closed by snow in November. The Haji Pir route is generally open in April.

Second.—The road from the plains by Kotli, Punch, Uri and Baramula. The distance is about 240 miles, the last five stages being the same as *viâ* the Haji Pir Pass. This route is open in April, but it is difficult and not recommended.

Third.—The road from Murree by Kohala and Baramula. Sirinagar is distant from Murree 163 miles, usually performed in thirteen stages. Between the second and third stages, the Jhelum river is crossed by a bridge. This road is good for laden ponies, and is always, or nearly always, open. The scenery is in many parts very lovely, and there are bungalows at all the stages.

Fourth.—The road from Rawul Pindee and Abbottabad by Muzaffarabad, and Baramula. From Pindee to Abbottabad is 61 miles, and from Abbottabad to Sirinagar 156 miles, or eleven stages. This is an easy route from the Punjab to Cashmir. Laden ponies go over it without difficulty, and it is never stopped by snow. The last two stages are usually done by water.

Along all the principal routes in Cashmir territory special officers or 'Kotwalls' are appointed to supply the wants of travellers. Unless travellers encamp at

the fixed stages, and encamping grounds where these men are stationed, there is no certainty that supplies will be obtainable. At many of the stages European liquors and stores are procurable, but this should not be depended upon, and the traveller should take with him both servants and all that he requires in the way of stores.

The valley of Cashmir is a tract surrounded by lofty mountains on all sides excepting where a gorge at the north-west extremity permits the escape of the Jhelum river. The central part of the valley is a level expanse, but in some other districts it presents a very uneven surface formed by numerous ridges and ravines, extending from the plain to the surrounding highlands. The shape of the valley is irregularly oval. The plain forming the centre of the valley is about 75 miles long by 40 broad. But the actual area within the ring of hill summits is much larger. The narrowest part is the southern extremity, and the widest is north of Sirinagar, where large portions consist of flooded land or marshes. The extensive alluvial tract in the centre is intersected by the Jhelum river and its numerous tributaries, which flow from the mountains, and are fed by the snow and rains falling in these elevated regions.

Sirinagar, the capital town of Cashmir, is situated about midway from either end of the valley. The town extends about four miles along both banks of the Jhelum, which, here deep and sluggish, winds in a picturesque manner through the town. The general character of the city is that of a confused mass of houses, forming a curious labyrinth of narrow and dirty lanes, scarcely broad enough for a cart, and badly paved. The houses are usually two or three storeys high, built of unburnt brick and wood with roofs of

birch bark covered with earth, in which much vegetation takes root. The 'Jumna Musjid' is the most celebrated public building. The river Jhelum is crossed by seven bridges formed of wood. Houses are erected on some of these bridges, but others are unprotected, even by a rail. Besides the river, Sirinagar is also pierced by a number of canals, the principal of which are the 'Kuth-i-Kol' on the left bank, and the 'Mar' and 'Rainwari,' with their branches, on the right. Hence from these intersecting canals and houses, built sheer on the water's edge, Sirinagar has been called 'the Venice of the East.' On the north of the city rises a hill named the 'Hari Parbut,' which attains an elevation of 250 feet, and is crowned by an old fort. There is also another hill and fort, known as the 'Takht-i-Sulaiman,' at a distance of about two miles. From here a panoramic view is obtained of the whole valley. Immediately beneath is the city of Sirinagar, with the Jhelum river forming its main thoroughfare, with the citadel on one side, and on the other stretching poplar avenues. There is also the glistening expanse of lakes reflecting the passing clouds. Beyond the city, the Jhelum appears as a silver streak, pursuing its serpentine course through verdant plains till it joins the distant Wular lake. On the horizon on all sides there are the snowy ranges. The city is almost surrounded by lakes and morasses. To the south, close to the left bank of the Jhelum, the Vetuar jheel stretches for some miles. Morasses lie between the slopes on the south-west side of the valley, extending to the Wular lake about thirty miles distant. East and north-east of the town is the 'Dal,' or city lake, about five miles long and two and a half broad. This lake is supplied by a stream called the 'Tybul,'

which communicates with the Jhelum by flood-gates. This lake is shallow, and is crossed by a raised causeway, with here and there bridges, called the 'Gutta.' On the margins of the lake are several ancient pleasure grounds and palaces, the most celebrated being the 'Nishat Bagh,' built by Jehangir, and the 'Shalimar,' pictured in the closing scene of 'Lalla Rookh.'

The European quarter at Sirinagar is situated on the right bank of the Jhelum, between the Takht-i-Sulaiman and the south-east corner of the city. It is a plain a mile and a half long by half a mile broad, containing numerous gardens and inclosures, and is bisected by a poplar avenue. It is, in fact, an island, bounded on the south and west by the Jhelum, and by canals to the north and east. Along the river, protected by an embankment, there are several bungalows and three ranges of barracks, with accommodation for three families in each block. Other encamping grounds used by visitors are the 'Chenar Bagh,' on the 'Dal' Canal, and the 'Ram Moonshi Bagh,' a mile up the river, where there are other bungalows of a superior description and two-storeyed. Bachelors pitch their tents in the 'Hara Singh,' 'Tara Singh,' and 'Gormuck Singh' gardens. The Cashmir Government, to whom the accommodation for Europeans belongs, employs a person for the purpose of supplying the wants of visitors on payment, and there are also several Parsi shops in the European quarter.

The geological formation of the Valley of Cashmir is essentially igneous—basalt and trap. Beds of limestone also occur, containing organic remains, principally marine. Blocks of granite and veins of quartz have also been observed. Subterranean disturbances and earthquakes are common, and there are sulphurous hot

springs on the north-east of the Wular Lake. The average altitude of the Cashmir Valley is about 6,000 feet above sea-level, and 5,000 above the Punjab plains. The height of Sirinagar is 5,250 feet. But, as may be expected from the description of the locality, there is considerable humidity of the atmosphere; while, from the impossibility of efficient drainage, the ground is very moist. But from the elevation Cashmir presents a more temperate climate than other places of corresponding latitude. The spring—March, April, May—is cold and showery; summer commences in the middle of May, and is pleasantly warm. In July and August a slight rainfall takes place, but the clouds are intercepted by the mountain ranges, where most of the moisture is precipitated. In October snow commences to fall on the mountains, the nights getting colder. In November frost begins, with haze, and by the end of the year a general fall of snow takes place over the whole valley, lasting often at intervals for two months. But the winter temperature never sinks low enough to harden the snow, which is continually melting from the warmth of the ground, and being replaced by fresh falls. Fogs are frequent at this season. The hottest months are July and August, when 98° has been read in the shade; but usually 89° is the highest reading of the thermometer at the hottest period. July and August are regarded as the most unhealthy months, when the political Resident usually moves to Zulmarg. Zulmarg is a beautiful grassy plain in the Pir Punjab range, about 30 miles by land from Sirinagar, 8,000 feet high, and surrounded by knolls, on which visitors may pitch their tents and erect log huts. The climate is cool and bracing, but said to be somewhat moist. It

has, however, advantages over other hill stations in level roads, good turf, and flowers.

Although the sanitation of the city of Sirinaggar is very bad and the streets very dirty, the sanitation of the European quarter is efficiently carried out. There is a special corps of police and a large staff of sweepers. Latrines for the use of servants have been provided, and the cleanliness of these conveniences is well looked after. From the floating latrine system, which obtains in the city, the water of the Jhelum is fearfully foul; yet the inhabitants obtain their water from the nearest canal, the most particular sending to the river above the city. There is no good drinking water to be had close to the European quarter. The best water is from the 'Chashma Shahi,' on the slope of the hill, about one mile and a half away.

The principal trees are : deodar or cedar, pine, poplar, maple, and hawthorn. Of fruits there are apples, pears, peaches, apricots, plums, and some other varieties, found only in temperate climates. Melons, cucumbers, &c. grow on the floating gardens of the 'Dal' Lake. Daphne, barberry, and roses, grow in profusion, with most other flowers found in Europe. The principal amusements are: polo, cricket, lawn tennis, rowing, and the library. Owing to the large number of visitors, there is no lack of society; while the traveller in search of the picturesque, or the sportsman, will find ample occupation. Every corner of the vale, every nook where the lower land runs up into the hills, and every part of the slopes where the ground of the valley graduates into the mountains, will show some beauties for the traveller to delight in. For examples may be mentioned Zulmarg, already referred to; Lolab, situated on the southern side of the ridge, edging the

Wular Lake ; Tsirar, seventeen miles from Sirinagar ; Panpur, five miles away on the right bank of the Jhelum. Deer, antelope, black bears, and higher in the hills snow bears, may be found, while the pursuit of the ibex forms one of the greatest charms to the sportsman.

Yet, notwithstanding all the advantages enumerated, the opinion cannot be endorsed, that Cashmir is ‘an actual terrestrial paradise, blessed by bountiful nature with every advantage of water, soil, and climate.’ As already mentioned, although not the fault of nature, pure drinking water is a difficulty, while overcrowding of the encamping ground has rendered bowel complaints somewhat frequent. It is doubtful if Cashmir is at all suitable for either disorder of the bowels or affections of the liver. The March air is severe, and there is often unavoidable exposure to cold and wet, and in Sirinagar frequently indifferent food and water, so that more harm than benefit often results in such maladies. In any case, persons who go to Cashmir for their health should not remain at Sirinagar. The climate, owing to the lakes and morasses, is more relaxing than that of other parts of the valley. On the contrary, some parts of the valley are extremely salubrious ; good food, fresh atmosphere, and healthy exercise being obtainable to a greater extent than at Sirinagar. Four or five months, from May to September, may be spent very pleasantly in Cashmir (taking care to avoid Sirinagar during July and August) by the healthy person, or by those only requiring rest and relaxation from business, and change of scene. But the trip is not suitable for the invalid. Neither should children be taken there, as they are particularly liable to disordered bowels ; while milk, owing to cattle feeding

impurely, is bad, and is moreover often diluted with filthy water.

Dalhousie.—Dalhousie is 80 miles from Dharmsala and 50 miles from Chamba. Dâk garries run from the railway station at Unritsur (117 miles from Dalhousie) *viâ* Gurdaspoor to the foot of the hills, about 67 miles; the remaining 50 miles, from Puthankote, being done by palkee. This long journey has always proved a drawback to Dalhousie. The station is located on three hills, named Potrairie, Terah, and Bukrota, which are connected by excellent paths, in some directions suitable for a tonga. Geologically, the formation consists of slate, and greyish-white granitoid gneiss. There are also sulphur springs and a hot-water spring in the neighbourhood. The elevation averages 6,980 feet above the sea; the Bukrota hill (7,687 feet) being the highest point. The rainfall varies from 45 to 75 inches, but as much as 119 has fallen. There is comparatively little fog and cloud in the monsoon; while, owing to the nature of the surface, the roads are dry immediately after rain. The highest temperature in the shade is 89° in June, and the lowest 28° in December. The greatest range is 32° in June, and the lowest 18° in September. There is excellent natural drainage; and municipal rules regarding conservancy, cleanliness, and other sanitary measures, are strictly enforced. The water supply is fair, derived mainly from a spring on the Dyun Khoond Hill, and conveyed into the station by a channel, which, however, may become tainted in the rains. Vegetation is not abundant, but beyond Bukrota on the Chamba road there is a mountain forest called 'Kala Tope.' Dalhousie is an exceedingly picturesque locality, one of the finest views being the Gurdhan needle rock, about 50

miles distant and 21,000 feet high, towering above numerous other mountains and peaks, which form the snowy range to the north. On the east are steep hills covered with pine, oak, and rhododendron, contrasting on the west with equally lofty, but rough, rugged, and uncovered mountain sides. To the south is the glistening Ravee, winding its course to the plains and disappearing in the distance. In and about the station there is plenty of space for exercise, and there is a library and assembly rooms. The rains not being usually very heavy, the hot weather being comparatively cool, and the winter not severe, and unless snow falls the atmosphere being dry and clear, the climate is regarded generally as bracing and invigorating, and especially adapted for children. It may be recommended for convalescents from fever and its sequelæ; for cachectic or debilitated invalids; for hypochondriacal patients; and for those suffering from too much office or desk work. The climate has moreover a powerful influence in maintaining health and vigour, which has resulted in its utilisation as a military station for European troops, who are located in the Baloon barracks two miles from the Terah hill below the Mall.

Darjeeling.—Darjeeling is about 400 miles from Calcutta, and fifty from Siligoora, the terminus of the Northern Bengal State Railway. A traveller may leave Calcutta at 1 P.M. reaching the Ganges at Damookdea in the evening. Here the river is crossed in a steamer, where refreshment may be obtained. The train is again entered at Sara, and Siligoora is reached the following morning at 8 A.M. Travellers from up country need not enter Calcutta, but crossing the river at Hooghly, meet the train there. The Siligoora Station is on the verge of the terae, and within about

fourteen miles of the base of the mountains. This distance and the remaining thirty-six miles up the hill was formerly accomplished by tonga and palkee, the terae being considered so pestiferous that to avoid infection travellers were advised to rush over the ground by day, after a good breakfast and a dose of quinine. Now a steam tramway has been recently opened as far as Kurseong, which is to be continued the whole distance,¹ thus placing Calcutta in direct steam communication with the mountains. There are dâk bungalows at Siligoora; at Kurseong, twenty, and at Sonadel, ten miles from Darjeeling. Kurseong is about half-way from Siligoora, at an elevation of 4,500 feet, and there is also an hotel there.

The station of Darjeeling is situated on the slope and western exposure of a semicircular Himmalayan mountain ridge of the Sikhim range. The ridge is very narrow at the top, along which most of the houses are perched, while others occupy positions on the flanks, chiefly on the south-west aspect, which is not so steep as the eastern, where the bazaar lies. The valleys on either side are forest-clad to the bottom, 6,000 feet deep, and with very few level spots. Darjeeling consists of the civil station, and the convalescent depôt at the highest elevation about two miles away, while some three miles to the south is Senchal, the site of an old military cantonment, and which, from its protecting Darjeeling from the first blow of the south-west monsoon, has been termed 'the friendly umbrella.' Darjeeling is the summer headquarters of the Lieutenant-Governor of Bengal. There are numerous houses for rental at rather high rates, and also several hotels and boarding houses. The geological formation is gneiss with granite, sandstone,

¹ Now accomplished.

slate, and occasionally quartz cropping out. The average height of the station above sea-level is 7,169 feet. The rainfall is heavy, averaging 120 inches; in some years as much as 150 inches falling. But there are often breaks of a few days, and on most days there is some time during which exercise may be taken, and the roads dry quickly after the heaviest fall. The humidity of the atmosphere is at all times considerable, especially during the fogs and rains of the monsoon. The mean temperature is 56° ; the maximum in July being 70° , in May 65° , in December 52° , the minimum being for the same months respectively 59° , 51° , and 36° . The range of temperature is therefore not very extended. The drainage and general sanitary condition may be regarded as satisfactory, although certain surface drains leading to the little Runjeet river are liable to choke and become offensive in the hot weather. The water supply, formerly a difficulty, is now more pure and abundant, as waterworks have been opened and water from the adjacent hills is distributed by pipes, but even now in the hot weather there is some deficiency. The bazaar, sanitarily speaking, is well situated and well supplied, but all articles are expensive. Most European vegetables grow well, and many are frequently found for sale. On market day (Sunday) the bazaar is a remarkable sight, Bhoteas, Paharrees, Lepchas, Nepalese, Sikimese, and Europeans' servants all collecting. The station itself is not particularly picturesque, but the views from the station and in the surrounding locality are very fine. The low valleys are so situated that the spectator can see into their very depths from the same standpoint from whence he looks up to the snowy mountains. Both morning and evening the valleys appear gloomy, while the mountain

summits are tipped as though on fire. To the north especially the view is open, exhibiting range upon range of hills. The view of the snowy range from the Senchal parade ground is one of the most magnificent known, and in which the mountain Kinchinganga, 28,100 feet high, stands prominently. From the Cutcherry hill more than twelve pinnacles can be counted, all between 15,000 and 20,000 feet high. To the westward the view is confined by a lofty range at the distance of twenty miles. To the east appears the valley of the Teesta. To the south is Senchal, clothed with dark sombre forests. Various excursions may be made into the hills. By ascending the range, 10,000 to 12,000 feet high, which divides Sikhim from Nepal, the mountain Kinchinganga may be seen on the right, while on the left is Mount Everest, the central peak of which, 29,000 feet high, is the highest summit known. A favourite point, about twenty-six miles away, is the junction of the great Runjeet river, which separates the Darjeeling district from Sikhim, with the two branches Teesta. The latter river flows green in colour, while the Runjeet is clear, and the union of their waters viewed from a height of nearly 3,000 feet directly above is a magnificent sight.

The principal trees on the Darjeeling hills are sal, magnolia, oak, chestnut, toon, firs, and rhododendron, but it is stated that much of the surrounding forest has disappeared as firewood and for building purposes. Ferns, creepers, and numerous flowers abound. There are good botanical gardens in the immediate neighbourhood, and the cinchona plantations at Rungbhai and Mongpoor may be visited. To the inducements to exercise, and the enjoyment of the scenery, may be added the essential of good roads.

Notwithstanding the heavy rainfall and the fogs so prevalent during July, August, and part of September, and the consequent humidity of the atmosphere, Darjeeling, from the temperature being so equable, and from a remarkable immunity from violent storms or winds, is a healthy climate for Europeans. Except at the burst of the monsoon in June, and at its close in September, winds are light and variable, and storms are uncommon. In this equability of temperature, Darjeeling presents an advantage not appertaining to most other Himmalayan hill climates. March and May afford almost an English climate. From May till October the rain is objectionable. But the rain is not heavy and violent, rather quiet and persistent, while the damp and fogs do not prove injurious if ordinary precautions are taken as regards drying bedding and clothing. From October to February the days are usually light, sunny, and cheerful, and the nights cold, clear, and sometimes frosty. Snow usually falls in the winter, but to about half the extent experienced at Simla. On the whole, the winter is not of a severe character.

The climate is remarkable in its effects on weakly children from the plains, who rapidly become plump and rosy, even in the rains. Most diseases of adults are often benefited by the equable temperature. Malarious fever is never contracted on the hill, and fever patients from the terae usually recover speedily. Those maladies generally accredited to a damp climate are comparatively seldom met with. Diarrhœa is not common; and cough and cold, although present in the winter season, rarely pass into chest affections. Cases of asthma, or of heart or head disease, do not do well. Lastly, delicate people would often find it a safe precaution, especially if going up in the cold season, to

remain a few days at Kurseong rather than rush in a few hours to the altitude of 7,000 feet.

Dharmsala.—Under this name are really included three different places ; the cantonment of the Goorkhas, the civil station named McLeodgunge, and the European cantonment at Bagshoo. The three localities are situated on a Himalayan spur running from the north-east to the south-west. The Goorkha lines are about 4,000 feet high, but the Bagshoo cantonment is nearer 6,000, the spur rising immediately behind to an altitude of 16,000 feet, and shutting out the view to the north. The civil station lies between, and varies in height ; one extremity of the Mall, which is a fairly level road running through this part, being much higher than the other. The soil and subsoil consist of red clay with projections of sandstone and calcareous rock. Dharmsala is about thirty-six hours' travel from Dalhousie, and 104 miles from Jullundur in the Punjab, from whence there is a good driving road. There is an hotel, travellers' bungalow, and about fifty houses.

The rainfall is large, averaging about 120 inches, and the humidity during the monsoon is therefore great. The mean temperature between April and September is 74°, between October and March 62°. The maximum in May is 100°, and the minimum 56°. There is, therefore, a large range. The physical configuration of the surface secures fairly good drainage. The water supply is from springs, that supplying the civil station being some miles away, from whence the water passes by an open channel or 'kool.' It has been thought to produce bowel complaint in consequence of containing minute scales of silica and mica, which may, however, be got rid of by filtration. The vegetation includes oaks, pines, and rhododendron, while silver ferns abound.

The near irrigated valleys, and the snowy hills almost overhanging the spectator, combine in forming very fine views. Looking down from the Mall is the Kangra valley and fort. In another direction the dark forest and hill of Dhurmkote (with houses on its lower slope), rising some 2,000 feet higher than the station, and backed by rugged lofty rocks, are prominent objects. Among several excursions which may be made, that to Triune (*viâ* Dhurmkote), 10,000 feet high, may be mentioned. Were it not for excessive rain Dharmsala would be a more attractive station, but during the monsoon it is unpleasant from fogs and damp, if not unhealthy. Another drawback is the close proximity of the mountains, which at certain seasons tends to render the air somewhat stagnant. Moreover, cholera having occurred at Dharmsala several times severely, it is not a popular place of resort. A late writer indeed observes: 'The climate is most delightful when people are very comfortable in their bungalows on the plains.' In consequence of the defects of climate, the European cantonment at Bagshoo is not now utilised as a sanitarium.

Khandalla and Lanowli.—Khandalla is situated at the top of the Bhore Ghaut. It may be described as a plateau near the summit of the Ghauts, yet surrounded by hills at the back, with the plains in front.

Khandalla is 77 miles distant by rail (G.I.P.) from Bombay, and 42 from Poona. The railway station is almost in the centre of the place, so that Khandalla is more accessible than either Matheran or Mahableswar. Proceeding from Bombay by rail, immediately after passing the Kurjut station at 62 miles, the train commences the ascent of the mountains, affording the passenger views of lovely scenery. First, there are the

slopes of the Campoollee Valley, with the village of that name, long a prominent object in the different views. Crossing the Mowkimullee viaduct the Khandalla Valley is entered, and there is a passing view of both valleys at once. Above may be seen the plateau of Khandalla, which towers above the reversing station, and up the slopes of which the railway runs. Many short tunnels are passed through *en route*, and during breaks in the rains the journey is especially enjoyable; the extensive views, the luxuriant verdure on the mountain slopes, and the numerous near or distant cascades displayed on every escape from a tunnel, demanding the admiration of the traveller, first from one side of the carriage and anon from the other.

There are about a dozen houses at Khandalla, some of them for rental, and all within a convenient distance of the railway station. There is also a travellers' bungalow, affording six rooms and a hotel. The bazaar is generally well supplied, and the proximity to Bombay with several trains daily renders it easy to obtain any thing required.

The altitude of Khandalla is 2,000 feet above the level of the sea. The rainfall is much less than at Matheran; and although the monsoon is copious and an unpleasant period when at its height, the rainfall is not prohibitive of residence. The drainage is fair from the natural configuration of the surface, although there are some hollows and marshy spots. Sanitation is practically unattended to, the population being small. The water supply is good from wells.

The immediately surrounding hills are somewhat bare of foliage, but there are plenty of orchids, wax plants, and lilies to be found. There are also some mangosteen trees, chiefly in a valley which takes its

name from the said tree. There are indifferent ponies to be obtained on hire, and numerous beautiful views may be found either on foot or horseback, while the drive to Lanowli is a favourite one. From the travellers' bungalow after rain two cataracts are visible, one having a fall of 300 feet. A very fine view of the railway valley may be obtained from the cliff at the rear of the travellers' bungalow. From this or neighbouring 'coigns of vantage' may be seen the railway reversing station, Sivaji's two hill forts, funnel hill, and Matheran with its bungalows in the distance. The best view of the Concan is from the edge of the ghaut near Arthur Seat. From this point the scenery is a mixture of forest, cliffs, ravines, pinnacles, and hill forts, with the Concan in the distance. The Concan stretches away as far as the eye can reach, and pool and stream gleam like polished mirrors. On the far horizon the sea glistens as a silver line, and at sunset lake and mountain seem bathed in purple beneath the glory of the fading beams. The Duke's Nose, the waterfall, the dhobe's tank, and the Carlee caves, a favourite resort of picnic parties, may also be mentioned.

Khandalla is most delightful after the strong sea breezes begin to blow in April and May. There are also often showers in May, and always mist over the hills in the morning, which tends to cool and soften the air during the remainder of the hot season. After the first burst of the monsoon the weather is very enjoyable, occasional showers during the day leaving the air soft and mild, and in the mornings and evenings bracing and invigorating. After the rains cease, when the temperature during the day is 89° in Bombay, and 86° or 84° at night without a breath of air stirring, the temperature at Khandalla is about 80° , sinking at night

to 76°. The air also is comparatively dry, and there is usually a gentle breeze. From October to December is particularly pleasant, the country everywhere being covered with foliage and verdure, and the eye never wearying of gazing at the scenery. Altogether, Khandalla is a cooler and more agreeable locality than would be presumed from the height alone. This results from the elevation being abrupt, and from the hills being within the influence of the sea breeze. In addition to the great advantage of being more accessible, it possesses other advantages over the neighbouring station of Matheran. The climate is drier, the rainfall is less, so that visitors may remain during the whole monsoon, and there are carriage roads—a convenience not presented by Matheran. A recent writer in the 'Times of India' has thus compared the advantages of the two stations :

‘If there is any comparison between Matheran and Khandalla, commend to me the latter. I have been many times to both. In Matheran you are out of the world. You can only get to it by an hour’s ride from Narel, enough to knock the life out of one not in robust health. If you are too ill to ride, you must be swindled out of R.8 for a palki and unsavoury bearers, both going up and coming down. I own Matheran is glorious when you are there, but still it is not to be compared to Khandalla. At Matheran you are on an island, on the top of a hill, so shut up by trees that you can only get the views by going to the various points. In Khandalla you are in a valley and yet high above a valley ; hills all round you, steep cliffs below you. Alighted at the station *you have arrived at your destination*, no terrible ride along a hot plain for a couple of miles before reaching the slopes, but a pleasant cool five minutes’ walk into your bungalow.

‘Why is not Khandalla more popular? I think I can guess: there are perhaps a dozen private bungalows, which are usually full, and one travellers’ bungalow of six rooms only. This bungalow is mostly full, on Saturdays always so. Visitors are obliged to telegraph for rooms, and they often get the reply, “Quite full; cannot accommodate you;” so that they are obliged to defer their visit or go on to Lanowli. An hotel at Khandalla built cheaply (which has since been established) would pay splendidly. I have already prospected a good site, viz. on the edge of the ravine west of the travellers’ bungalow, close to the botanist’s obelisk monument. This is in full view of the trains coming into Khandalla station. It is only five minutes’ brisk walk from the station; the railway is on the other side of the ravine, and yet too far off to be a nuisance.’

As mentioned of Matheran, so of Khandalla and Lanowli, the change from the Bombay climate is not sufficiently great to prove dangerous, with the most ordinary precaution. The climate is a coast climate, rendered cooler by altitude, and persons pass from one to the other with impunity, which would not be the case if Khandalla and Lanowli were much higher and cooler.

Two miles from Khandalla is Lanowli, there being both rail and road communication. Lanowli is famed for the beautiful woods in the immediate locality. It is more open, and presents a greater extent of flat surface than Khandalla, and the hills at the rear are not so high or so close. At Lanowli there is one small hotel, but usually no houses for hire, the existing bungalows being chiefly occupied by the employés of the G.I.P. Railway. The climate does not differ materially from that of Khandalla, but it is on the whole a

warmer locality. Medical attendance is not obtainable either at Khandalla or Lanowli, except from the railway surgeon, the localities not being recognised as Government stations or sanitarium.

Kusowli and Sunawar.—Kusowli is 45 miles from Umballa, and on the route from Pinjor to Simla, 14 miles from the former, and 32 from the latter. Kusowli is a hill about five miles in circumference in the Simla district, and considerably detached from the main range. The upper portion is an undulating tableland. From the plains the ascent is very sudden, and the road is chiefly cut along a steep hill side. The northern face is less abrupt, and runs into the range which slopes to the 'Gumber' river. Sunawar, the site of one of the Lawrence Asylums for European children, is situated on an adjoining spur about two miles away. There is a good hotel, a dâk bungalow, and also houses for hire. The elevation is nearly 6,000 feet, the rainfall is about 72 inches, and there is much fog and damp in the monsoon, but less than at Simla. The drainage is naturally good, the sides of the hill being so precipitous that no water can lodge. The water supply is good, but unfortunately from springs situated some distance below the level of the station. The hill top and northern slope are covered with pines. January, February, and part of March are cold with bleak winds and falls of snow. April, May, and June are warm, the temperature often reaching 89°. October, November, and December are fine and bracing. The lowest mean temperature in January is 39°, the highest in June 67°; the mean for the year is 56°.

West and south-west the view of the plain is boundless, displaying the windings of both the 'Sutlej'

and 'Junna,' while in the northerly direction Dugshai, Subatho, Jntogh, and Simla, are visible, backed by the higher Himmalayas, with due north the snowy range. Amusement and recreation are, it is stated, 'on a limited, humbler, and milder scale than at Simla; still reasonable and contented persons may spend their leave at Kusowli with great pleasure, and profit to their health.' The climate is regarded as especially favourable to the results of fever, a disease never contracted on these hills. Bowel complaints, especially during the rains, liver affections, heart and chest complaints, are not benefited. The reports of the Lawrence Asylum sufficiently prove that the climate is excellently suited for children.

Kusowli is a military depôt as well as a civil station.

Mahableswar.—Mahableswar is a very elevated part of the great western range of ghauts, forming some of the highest ground between the Nilgherris and the Himmalayas, and within view from the Malabar coast. Mahableswar is 74 miles from Poona, 30 from Satara, and 294 *viâ* Poona from Bombay. A traveller may leave Bombay by the 2.30 P.M. train (G.I.P. Railway), arriving at Poona at 8.15 P.M. He may dine at Poona, and be on Mahableswar by 9 A.M. next morning, travelling by carriage dâk. Or he may break the journey by staying at one of the three travellers' bungalows on the road.

Another route from Bombay is *viâ* Dasgaum. Steamers leave the Carnac Bunder thrice weekly for Bankote, 68 miles down the coast, which is reached in the evening. From thence a small steamer takes passengers to Dasgaum about 25 miles up the Savitre river. At Dasgaum there is a travellers' bungalow a quarter of a mile from the landing-place. From

Dasgaum to Mahableswar is 46 miles, and there are two bungalows *en route*: at Poladpoor, 18 miles, and Warra, 16 miles. Tongas or palkees may be obtained at Dasgaum by previous application to the mail contractor. The passage up the Savitree river either by day or moonlight discloses a succession of beautiful views, as the river winds between hills the whole of the way. Unfortunately, except at high water, the small steamer is liable to run on sand banks, which may cause delay, and the period of the steamers leaving Bankote is variable to suit the tide, which are objections to the route. Provisions should be taken from Bombay, as messing is not provided on these steamers. At Mahableswar there are numerous houses for rental, two hotels, a travellers' bungalow, and also a range of Government bungalows for officers, under the charge of the superintendent, who is a medical man. The cost of living is moderate, and supplies plentiful, but good milk is dear and difficult to procure.

The tableland of Mahableswar is rugged yet undulating, and although of no great breadth, is of very considerable extent. Taking Malcolm Penth as a centre, it stretches about fifteen miles east towards Wai; another branch extends about seven miles south-east in the direction of Satara; westward to the top of the Ghaut leading to the Concan to a distance of about two miles; and to the north-north-west the level is prolonged for nearly six miles by the promontory of Elphinstone Point. The station occupies the north-west portion of this tableland, having a south-westerly aspect, and being generally densely wooded.

The geological conditions are somewhat complex. Basalt and trap are overlaid by indurated iron, clay, or laterite of a very cellular description, which becomes

dark and hardened by exposure to the air, and forms durable building material. The surface soil is rather scanty, and composed chiefly of red iron clay, sand, and vegetable mould. The average elevation is about 4,500 feet, but immediately to the east of the station there is a rocky plateau 200 feet higher. The mean annual temperature is 66° Fahr.; the daily average range is 8°, the maximum of summer heat 89°, and the ordinary limit of winter cold 40°. The rainfall, owing to geographical position, is enormous, rendering Mahableswar, like Matheran, almost uninhabitable during the monsoon season. The natural drainage of the station is good, and the general sanitation fairly attended to. The water supply from springs is also good. The most common tree is the jambool, and the willow grows by the sides of the numerous rivulets on the slopes of the hills. There is a great profusion of both flowering shrubs and flowers; each season, almost each month, bringing out some fresh variety. Among the former, perhaps the most remarkable are the *Arjuni* or iron wood, and the *Memecylon tinctorium* with its beautiful purple blossoms. There are also several species of jasmin. Many individuals of the fern tribe grow with great luxuriance. A flag-leaved variety of *Curcuma* is also prominent, and which during the rains bears white, pink, and yellow flowers. After the rains commence a *Crotolaria* resembling yellow broom becomes conspicuous.

There are good roads at Mahableswar on which carriages may be used, and still more suitable for horse exercise. There are also magnificent views obtainable, a characteristic of the scenery being the mountains with their horizontal strata of igneous rock appearing as if cut into steep scarps. The distant views towards

the Indian Ocean, over the Concan, and into the valley of the Savitree river from Bombay, Babington, Elphinstone, and other Points, are particularly fine, especially at sunset. The falls of the Yenna may also be mentioned. Towards the termination of the hot season the Concan is usually covered with clouds every morning, the summits of the hills rising like islands from the white mass until the latter is dissipated by the sun.

The station being the summer head-quarters of the Government of Bombay, there is no lack of society. The season commences in March, and lasts till the beginning of June. The hottest time of the year is generally from about the 12th of March to the middle of April, when during the day the temperature may rise to nearly 90° , but the nights are always cool and refreshing. At the commencement of the season the winds are variable and sometimes from the east, but a strong sea breeze soon sets in daily, and blowing with increasing strength till the monsoon, altogether negatives the effect of the solar heat. From the end of April thunderstorms are not unusual. In May the atmosphere becomes sensibly moister by day, while clouds and mist shroud the hill by night and in the early morning. In the beginning or sometimes not till the middle of June, the monsoon commences, and the place becomes uninhabitable. While the south-west monsoon prevails or till September, fog and heavy rain with high winds characterise the climate, which however is less severe on the eastern side than on the western or more exposed part of the tableland. During the rains the mean temperature is about 63° , and the thermometric range does not exceed 3° . In September the sky clears, and variable winds, passing showers, and calms terminate in the more settled

weather of October. The second season for visiting the hill now commences. The change at this time from the hot, sultry, close atmosphere of the plains, to the cool, invigorating, elastic freshness and gentle breezes of the mountain, affords even more relief than that experienced in the hot weather. While the thermometer below may reach 86° at midday, it ranges on the mountain below 66° , with a variation of only 7° . There are also occasional clouds and showers, which tend to maintain the balmy coolness and freshness of the air. In November clouds are no longer seen, and showers cease, and the climate becomes cooler and drier. The wind also veers to the east, in which quarter it remains more or less till the end of February. During all this period the weather is fine, the mean temperature averages 62° , and the greatest cold only produces slight hoar frosts. Although the easterly winds of the cold season are sometimes complained of as dry and harsh, the days are as a rule mild and genial, yet affording a cool, bracing, elastic atmosphere; and although the nights may feel cold by contrast, the coldness is rather the effect of the great stillness of the air and of radiation, than of general diminution of temperature.

The elevation and position of the tableland of Mahableswar, which secures so delightful a climate, also places it beyond the range of malaria, so that malarious fevers are never contracted on the hill. Similarly cholera has never originated there. Almost all maladies excepting confirmed liver or dysenteric affections, or rheumatism after the mists commence in May, will be benefited by the equable nature of the climate. Like Matheran, it may be regarded as a coast climate tempered to a greater extent by greater altitude, and is thus especially serviceable to those who

during years have been subjected to the moister, hotter atmosphere of the coast localities. The immediate effects of the transition are increased tone and vigour of the system generally, and especially of the digestive organs. The loathing for food so often experienced as a result of debility from heat, is replaced by a good appetite; and if the person is free from organic disease, health and strength soon return. It will, however, be necessary when the digestion has long been impaired, that the appetite should not be too freely indulged, a little precaution in this respect securing progressive improvement without the checks which may occur from taxing the digestive organs too severely at first.

Matheran.—A hill about twenty miles east of Bombay as the crow flies, but sixty *viâ* the Narel station on the south-eastern branch of the G.I.P. Rail, which is near the foot of the hill. Visitors to Matheran can leave Bombay by the 2.30 P.M. train, which arrives at Narel at 4.28. The ascent begins about half a mile after leaving the station, and must be accomplished by palkee or jaupan, or on horseback. To be certain of obtaining a palkee, jaupan, or pony, it is advisable to write beforehand to the office of the Superintendent at Matheran. From the Narel railway station to the post office at Matheran, which may be regarded as the central position, is about seven miles. The first half, or for two miles and a half of the ascent, the road is not very steep. The last two and a half miles is more difficult; the road especially towards the summit being a zigzag path, formed on the declivity of the mountain. About half-way there is a belt of forest through which the road passes. From the top of the ascent to the centre of the station is about two miles over the 'Bazaar Road,' which is a good one.

Matheran is a vast mass of trap of various kinds capped by laterite boulders, much of the rock being ferruginous. It presents on the north a nearly straight and even wall of 2,000 feet, almost to the plains below. In other directions there are also steep precipices. In shape Matheran is very irregular, but may be described as a central ridge from the extremities and sides of which numerous spurs project. The central ridge is about one mile and a half long, by half a mile at the broadest part, but much of the ridge is not so wide. The most important spurs or 'Points' are : Panorama to the north, Chowk to the south, Garbut on the east, and Louisa on the west. Other points formed by minor projections are known as Porcupine, Echo, Landscape, Danger, &c. From all these points views of greater or less extent are obtained, the most extensive being that from Panorama Point, which displays not only the adjacent mountainous scenery, but also a long stretch of plain with Bombay and its harbour in the distance. In the foreground there are plutonic rocks bold and precipitous, yet fantastically shaped and grouped, and displaying patches of forest vegetation. The middle distance consists of plain, intersected by rivers and creeks, terminating in the harbour of Bombay, whose white buildings gleam faintly, while the ocean glistens beyond.

The average elevation of the summit of Matheran is 2,200 feet above sea-level, but as the elevation is very abrupt, the hill atmosphere is cooler than would be the case if the incline were gradual. The very large number of trees on the hill also tend to reduce the temperature by preventing the ground becoming heated, but it is questionable if there are not now too many trees, which while tending to keep the ground

cool, and affording grateful shade, do still on many parts of the hill prevent free perflation by the light breezes which prevail during the earlier part of the hot season. Thus, while the cold weather is very pleasant, the thermometer seldom rising above 78° by day and 70° at night, the months of March and April, when there is little wind, are comparatively hot and oppressive, especially in the day-time, when the temperature may reach 90° , with a mean of 80° . It is later on or from early in May that the change from Bombay is so agreeable. Early in May, often before clouds appear over the plains, morning mists on Matheran obscure the sun, and proclaim the approach of the monsoon. At such times the night atmosphere is damp, and care should be taken that clothing and bedding are kept dry. With this precaution, the hot weather climate is very enjoyable, if only from the cool slumber obtainable. To require a blanket at the end of May, and to find the thermometer from dark to dawn below 70° , is such unspeakable luxury to the visitor from hot steamy Bombay, that it would requite the trouble of the journey, were this the only advantage. But in addition there is a pure, elastic, exhilarating atmosphere, very different to the damp, heated, and often foul and stagnant air of Bombay. The eye also, tired of crowded streets, garish buildings, and open sea, glaring under a vertical sun, is refreshed by shade, cloud, and verdure; while the sense of hearing, so often irritated by the discordant noises of a native city, is tranquillised by quietude or delighted by the songs of birds. There is little wonder therefore that Matheran, being so conveniently situated, is so much resorted to from Bombay during the hot season. The climate of Matheran is, in fact, a coast climate, rendered cooler by

an abrupt elevation, by forest, and for a month previous to the monsoon, by more or less dense morning mists. But, unlike a change to many other hill stations, the change to the Matheran climate is not sufficiently great to render frequent passage from Bombay to the hill, and *vice versâ*, at all risky to health. Hence, gentlemen whose families are at Matheran may spend several days on the hill, returning to Bombay with impunity for the remaining portion of the week, which they would not be able to do without danger if Matheran were much higher and much cooler than it is. Unfortunately the Matheran summer season is short, for the heavy rainfall, commencing about the middle of June, and sometimes before this date, and averaging 250 inches, renders the locality almost uninhabitable till about the middle of October. But with all its heavy rainfall, none lodges on the surface at Matheran, there is no marsh on any part of it, and the bed of every nullah is rock. All material which might decay into malaria is washed away by the annual deluge, and the thickest jungle on the summit may be entered with impunity, although in the autumn it is dangerous to venture into the jungles below the crest of the hill. From the middle of October to the commencement of March the climate is cool and delightful, and the hill is again much resorted to in October and November. During the remainder of the cold season the Bombay climate is not sufficiently bad to induce many people to leave it for the hills, so Matheran is comparatively neglected. All persons jaded by work or heat, or convalescent from fevers, or from other exhausting diseases, may spend both the hot and the cold season at Matheran with great advantage, and especially so the latter part of the hot and the early portion of the

cold season. But when the cold season advances and the dry land winds of the Deccan prevail, all who have suffered from, or have tendency to, fever or liver disease, should leave. The Matheran climate is also ordinarily well suited for children, although, if choice were afforded, Mahableswar would be the better place.

There are four or five hotels at Matheran, in all of which there is both fair and very inferior accommodation, the difference depending on the position, aspect, and size of the apartment an applicant may secure. There are also about forty houses, some fairly built and well situated, others very 'kutchas,' and in comparatively bad sites. Most of these houses are for rental 'furnished,' but with not more than common necessities. There is now a good water supply on the hill, drinking water being obtained from several springs found in the gorges, and for other purposes from an artificial tank furnished with an apparatus of pipes and hose, from which the 'bheestees' may conveniently fill their 'mus-sucks.' The bazaar is also fairly supplied, and vegetables are often procurable. There is a market day once a week. The railway station at Narel at the foot of the hill is provided with bath and dressing-room accommodation, and food is also obtainable there. But it is a very hot situation, and no one remains longer there than he can possibly avoid.

Murree.—Murree is situated in the Hazara Hills, near the western termination of the Himalayas, about 12 miles from the right bank of the Jhelum; and between that river and the Indus. Murree is about 36 miles from Rawul Pindee, which may be done by dooley in twelve or fourteen hours. Sirinagar in Cashmir is about 160 miles (thirteen marches). Murree is a very favourite station, but rather bleak and exposed.

It has been described as 'a long line of houses on the top of a hill,' which is about four miles in length, extending west and east from a high peak called 'Pindee View' to 'Cashmir Point,' 7,507 feet high, in which the elevation culminates, the average height being about 7,000 feet, and the lowest point, 'Oxford Hill,' 6,500 feet. The average rainfall is about sixty inches, and the atmosphere is usually comparatively dry. The mean temperature between April and September is 68°; between October and November, 48°.

The ridge on which the station is situated is composed of purple ferruginous clay and hard sandstone, with in some directions clear blue limestone. It is well drained by natural channels, and the general sanitary arrangements are now improved. The water supply is good and sufficient from springs efficiently protected. The ridge itself is rather bare of vegetation, but north and west oak, pine, chestnut, poplar, and willow may be seen; east and south the slopes are comparatively bare. Potatoes and other vegetables grow readily. There are good roads for exercise, and some fine views; but in this respect the palm must be given to other localities. To the north and north-west the appearance is a sea of low hills, growing larger till they culminate in the Pir Punjab, which rises 10,000 feet high; to the east are the lofty ranges bounding the Cashmir Valley; to the south-west the Rawul Pindee plains.

Murree has an advantage over most other mountain regions in the comparatively small amount of rainfall, so that there is little difficulty experienced by those remaining during the monsoon period, although, of course, there is a certain amount of damp and fog to be contended against. During the hot season, May and June, the sun is powerful, and the atmosphere often

hazy. In the winter months snow falls, frequently with easterly winds, otherwise the air is bracing and elastic. In March there are sometimes storms of hail or sleet. April is mild and balmy. But the upper part of Murree is more freely exposed to the winds than the lower part, which is sheltered from the east and north-east winds of winter, and from the damp east and south-east winds of summer, while it is open to the more wholesome westerly winds. The climate is unsuited for organically diseased persons, but most other invalids are benefited. Children usually do well at Murree, but children's diseases, as measles, whooping-cough, croup, coughs, and bronchitis, are not unknown. Dr. Ince, in his 'Guide-book,' advises that children be taken indoors in the hot months at 7 A.M., and before sunset in damp weather, when flannel clothing is especially required. Murree has suffered in estimation as a health resort, from the occasional occurrence of cholera.

There are about ninety houses at Murree, a good public bungalow, and several hotels, and supplies are fairly cheap. The station is the site of the Memorial Lawrence Asylum, in which the death-rate and sickness are remarkably small. There is also a convalescent dépôt for European soldiers.

Mussooree and Landour.—These places, situated on one of the outer ranges of the Himalayas, are often called 'The Hills north of Deyrah.' They are the oldest of the sanatoria in the Himalayas, and so far back as 1841 there were upwards of a hundred houses. Mussooree and Landour are about 120 miles from Meerut, and forty from Roorkee. Saharanpur, on the East Indian Railway, is the nearest station. From Saharanpur, about fifty miles must be accomplished by

carriage along a rough undulating road by the Sewalik range, and eventually dipping into the valley of the Deyrah Doon to Rajpoot at the foot of the hills. On the road there are several bungalows; and at Rajpoot, hotels. The remaining nine miles of ascent may be done by pony or janpan. About half-way up is Jerrapannee, a halting place, where there is water; and shortly afterwards, at an elevation of 5,000 feet, the bungalows of Europeans are first seen. There are numerous bungalows for hire, and three or four hotels. There are also four churches, a club, several schools, a home for soldiers' children, hill breweries, and a well-supplied bazaar. At Landour there is an European soldiers' depôt.

The hill on which Mussooree is built rises from the plains in the form of a horseshoe, gradually ascending to the centre and inclosing in the hollow numerous ridges, which lose themselves in the mass above. There is no tableland, and the general appearance is a series of hills with deep valleys, steep precipices, or long sloping banks. The houses are mostly on sites which it has been necessary to level, or on a ridge or crag, especially on the southern slopes. Landour is situated on a ridge running east and west, and is three miles east of Mussooree. At its eastern extremity the Mussooree Hill is connected by a narrow spur with the Landour Hill. This spur is from twenty to thirty yards broad and two hundred long, with a precipice on either side, and an abrupt rise to the higher position of Landour. The two stations were at first quite distinct, but as they grew larger gradually merged into one, and are almost connected by straggling buildings.

The geological formation consists of clay, slate, and limestone, with beds of sandstone, and on the heights

of Landour quartz abounds. The average elevation is about 6,500 feet above the sea, but some points attain upwards of 7,000 feet; the highest being the observatory at Barrog, 7,432 feet. Mussooree generally is about 700 feet lower than Landour. The rainfall is variable, but averages about 75 inches, commencing in the middle of June, ushered in by thunderstorms, and ceasing about the middle of September, during the greater part of which time clouds obscure the atmosphere. The highest summer range of the thermometer is 80° , usually recorded in the end of May, and the lowest winter range is 32° in January. The daily range of temperature is considerable, as, especially in the hot season, a breeze from the south, called the Doon breeze, sets in about 10 o'clock and blows till late in the evening; while at night there are generally light airs from the north. In the latter part of winter there are frosts with occasional falls of snow. At the commencement of the spring season, or in March, there are often showers or hail with thunder. Landour being higher and more exposed is 4° cooler than Mussooree, but it is subject to more sudden changes, which may indeed be said of the north side of the hill generally.

Consequent on the geological and physical formation of the locality, there is good natural drainage; but the sanitation of Mussooree, which is not, like Landour, under military control, is susceptible of improvement. The hill summits of lime and sandstone being good water-bearing rocks, there is ordinarily a plentiful supply of this necessary from openings on the sides of the slopes, and although the water contains a little lime, it is of better quality than that obtainable at some other hill stations. It is well, however, to avoid water from springs in the neighbourhood of the bazaar, which have

been thought liable to pollution from the houses and population above their source. The vegetation, while sufficient to gratify the eye, is less abundant than at some hill stations, but includes the oak, pine, deodar, yew, juniper, and lower on the hill, sal and bael. During the rains the oaks and rhododendrons are clothed with luxuriant masses of ferns and orchids. The views are very beautiful, comprising on the north the Himalayas clad in perennial snow; on the south the rich and varied expanse of the Dehra Doon, bounded by the Sewalik hills, beyond which the prospect extends over the vast plains of Hindustan without any other limit than that of the powers of vision, or that caused by the imperfect transparency of the atmosphere. On the approach of, and towards the termination of the rains, when the sky may be clear overhead, heavy rolling masses of white vapour rise from the plains, enveloping first the Sewalik range, and then the entire valley of the Doon. The vapour rises higher and higher, until the observer and the whole station are shrouded. In an hour or less the sky may be again clear, and the sun shining brightly on the valley of the Doon.

The summit of the hills is several miles long, and the hill paths are fairly adapted for invalids, who are thus enabled to take exercise without undue fatigue in the midst of glorious scenery and pure refreshing air. From all the above it will be evident that the climate of Mussooree is excellent, the only fault being that it is rather variable. It has been said of Mussooree, 'Its warmth is not heat, and its coolness is not cold.' During the monsoon the fogs and damp are less than at most other elevated sites, and the cold weather is bracing without being too cold. Competent judges

have indeed regarded the climate as the best in the outer ranges of the Himmalayas.

Of the diseases contracted in the plains, residence here is found favourable to fevers of intermittent and remittent type, to dyspepsia, to general debility and exhaustion of the constitution from almost any cause. The southerly aspect of the hill has also been beneficial in incipient pulmonary consumption and for rheumatism. Confirmed liver or bowel complaints are not benefited, but there is less diarrhœa at Mussooree than at most other Himmalayan stations. Affections of the heart have also a tendency to grow worse. Children thrive remarkably well, and nearly all diseases of childhood are benefited by the climate, while the liability of this class to special maladies, as bowel complaint, croup, or chest affection, sometimes obtaining in the hills, may be—notwithstanding the variability of the breezes—with ordinary care, reduced to a minimum.

Convalescents may find occupation and amusement in the Himmalayan Club, in the scenery, in a good library, and in visits to various localities, of which the Kempli and Bhatta falls, and the ‘Happy Valley,’ are among the principal. If long excursions are required, there is the military station of Chuckrata, over the Western Doon, three marches away; Simla, fifteen stages, or 147 miles; and Naini Tal, seventeen stages, or 217 miles.

Naini Tal.—Naini Tal is situated in the Kumaon district, North-West Provinces, on the Gagur Himmalayan range, and is 22 miles south of Almorah, 140 from Meerut, 16 from Kaladoonghy, at the foot of the hills, and 50 more from thence to the rail at Moradabad. A better route is by rail to Bareilly, then 70 miles by dâk gharry to Rambagh, leaving 13 miles up

the hill by pony, palkee, or janpan. Naini Tal presents an advantage over some other hill stations in the cart road which runs to the centre of the station, so that coolies are not required to carry things up the ascent; but luggage by cart from Bareilly is seven days on the road, and sometimes longer. There is plenty of accommodation for visitors at Naini Tal, there being a travellers' bungalow, several hotels and boarding houses, and about three hundred private houses, many of them for rental.

Naini Tal may be described as an amphitheatre in the mountains, surrounded by hills rising 2,000 feet higher, except on the south-east, where it is open to the plains. The range in which the station is located rises somewhat precipitously from the plains, and attains its highest elevation in the Cheenur Peak (8,732 feet), from which a spur called the Aya Pata projects in a south-east direction. In the centre of the valley thus formed between the spur and the main range is the large and picturesque lake or 'tal' from which the locality takes its name. The lake is about one mile long, a quarter of a mile broad, and three and a half in circumference. It is filled by the rains, and also fed by springs from the neighbouring hills, the surplus water escaping by a gorge. The lake is situated at the lower end of the valley, which is about two miles long and half a mile broad. On the south side of the lake the rocky precipices of the Aya Pata descend abruptly into the deep water below them, but on the opposite side the slopes are not steep, and it is on this side and on the hill sides above that most of the station is situated. The bazaar and public buildings, as the church and club, are towards the centre of the amphitheatre, and many houses are near the lake. Others

are situated at varying elevations on the hills, sloping more or less precipitously to the lake, the intervening spaces and adjoining heights being clothed with forest trees. The height of the lake above the sea is 6,400 feet, but, as before intimated, the surrounding hills are much higher, rising from 7,000 to 8,500 feet. Government House stands at a height of 7,000 feet, and most of the houses are between this altitude and that of the lake.

The rainfall is very variable, sometimes as much as 140 inches falling, but the average is 70. It is stated that 219 days in the year are fair, 68 cloudy, and 76 wet from either rain or snow. During seven years some rain fell every month except November, August being usually the wettest period. The geological characteristics of the locality are clay, slate, limestone, and shale, with a light friable surface soil. The conditions, therefore, are just those favourable to landslips. One happened some years ago at Sukka Tal, a favourite picnic place. On September 22, 1880, an awful catastrophe of the kind occurred. After 25 inches of rain in forty hours a landslide buried the outbuildings of the Victoria Hotel, in which were about twenty natives and one European child. Assistance was immediately given, and although the rain continued to fall heavily both soldiers and civilians engaged heartily in the rescue of the sufferers. But, in the words of the telegraphic despatch, 'At one o'clock all seemed well; the working party were busy at their task at the bottom of the precipitous ascent which overhung the hotel; the dead were being carried off and the wounded cared for. About half-past one Naini Tal was startled by a sudden and sullen roar louder than the simultaneous crash of heavy guns, followed by prolonged

rumbling as of distant thunder, and then by ominous silence. Vast clouds of dust rose heavenwards through the murky atmosphere, enveloping in one dense shroud the tract of ground from the hotel outwards to the assembly rooms and the lake. The whole place shook as though an earthquake had passed over it. The waters of the lake rose in a moment far above their usual limit, and swept in a massive wave towards the weir. Then all was still. Never was havoc more sudden, more awful, or more complete. Down came with one fell swoop the enormous landslip, burying the hotel and the gallant band behind, engulfing the road and garden, and the orderly room and shop, the assembly rooms and library, with almost every living soul that they contained.' From this terrible catastrophe thirty-seven Europeans and fifty natives lost their lives.

The mean annual temperature is 58° . The heat in summer seldom exceeds 80° in the shade, but in winter it may sink to freezing point. The maximum and minimum are in May 78° and 48° ; in June 69° and 59° ; in July 78° and 61° ; in August 76° and 62° . There is good natural drainage, but much filth must find its way into the lake, although not to the extent which has been presumed to change the colour of the water, which, usually clear, is sometimes discoloured by earthy material from the neighbouring hills, or by infusoria. The general sanitation is good, and receives much attention. Drinking water is derived from springs and is good. The principal trees are the rhododendron, cypress, and ash; orchids, violets, anemones, and ferns flourish almost everywhere. All kinds of European vegetables will grow, and the Naini Tal potatoes are celebrated. Healthy visitors and convalescents will find exercise and amusement in

sealing the various heights. One of the chief features at Naini Tal is 'Snow Seat,' from whence there is an unimpeded view of a hundred miles of snow-clad peaks, including the grand mountains Tresul and Nandadevi. For those less able to take exercise there is the level walk round the lake, a good library, and the society of a large population, the station being the summer resort of the Government of the North-West Provinces. The social characteristics have been neatly described by a newspaper writer: 'It is Simla seen through the wrong end of the telescope. It has its little viceroy and its little commander-in-chief. The little court has little levees and little drawing-rooms, little garden parties and little state dinners; and the consequence of all this is, that it conducts itself with great decorum like bigger places. Socially, I say, it is Simla in miniature; but in other respects it is very different. Instead of being perched on the topmost ridge of a mountain, like a chimney-stack on a house-top, it is situated on the shores of a lovely lake embosomed among the bosky hills. Instead of being a long summer day's ride from the plain, it is only a morning's canter. While Simla is horsy and disports itself at Annandale, Naini Tal is aquatic and gambols on the lake.'

The climate, except during the rains, is bracing and invigorating. Although so surrounded by hills, these do not prevent free circulation of air, as a current entering the valley to the north between the main range and its spur may leave it by the southerly opening to the plains, or *vice versa*. Usually in the morning the atmosphere is calm; during the day a southerly or south-west wind springs up, often about sunset displaced by northerly gusts from the moun-

tains. This colder evening air may be injurious to children and delicate persons, who ought not to remain out after sunset, exposed to the sudden changes of temperature at that period. The summer morning air, on the contrary, is equable and healthy. In the cold weather, the sun having little power and shade being easily available, children and invalids may be out most of the day, except when snow falls. In the rains, notwithstanding an incessant downpour, the temperature is uniform, and there is comparatively little fog, and not much sickness traceable to damp. Perhaps the two worst months are February, when there are often rain or snow storms with cold raw winds, and September, which is relaxing. Hill diarrhœa, although occasionally met with, is not prevalent at this station; but usually, from incautious exposure to the northerly night winds, rheumatism and neuralgia are not uncommon. Probably from similar causes croup in children, and bronchitis in adults, sometimes occur. The class of patients most benefited by residence at Naini Tal are those debilitated by long residence on the plains, or from the effects of repeated ague. Liver and spleen complaints are not benefited, although there is a sulphur spring in the neighbourhood which has proved useful in liver disorders. Persons with heart affections are not advised to go to Naini Tal. It should be mentioned that there is a depôt for European soldiers at the station.

Nilgherries.—These hills, so called from ‘Nil,’ blue, and ‘giri,’ a mountain, have been named ‘The blue-mountains,’ from the blue *justitias* which cover many of the hill slopes, or, as some think, in consequence of a peculiar blue haze in the atmosphere over the hills, probably due to elevation and rarefaction of the air,

and to the comparative proximity of and reflection from the Indian Ocean. The Nilgherry mountains may be described as a triangular granite mass, with veins of basalt, hornblende, and quartz, covered with a fine vegetable mould and in some places black soil, the surface being turf. The side which may be regarded as the base of the triangle extends nearly north and south, and faces Malabar. The greatest extent obliquely from north-west to north-east is 40 miles, and the breadth about 15. The summit of the mountains, although occasionally peaked and rugged, presents generally an undulating outline or rolling plateaux. The base of one hill on the tableland rises close to that of another, the valleys being generally small and sometimes swampy, but emitting no injurious exhalation. The hills are not densely wooded, but trees occur in isolated patches usually in the valleys, and are often surrounded by green turf. From the peculiar nature of the climate, between that of a tropical and temperate zone, the botanical productions are of a rich and very varied description. There are two sanitary stations, viz. Coonoor and Ootacamund, and about seventeen native villages on the range. There is also another station called Kotagiri about twelve miles from Coonoor, chiefly inhabited by tea planters and their employés.

The Nilgherry hills are distant from Madras 350 miles. The route is by the main line S.-W. Madras Rail, running from Madras to Beypoor, as far as the Pothanoor junction (301 miles), where there is a travellers' bungalow. Then from Pothanoor to Mettapolium on the Nilgherry branch, 27 miles. Mettapolium is six miles from the foot of the hills, and the station is a very hot dusty place, but there is an hotel near with more shade. From Mettapolium to Kullar,

at the foot of the hills, is usually accomplished by carriage, after which the nine miles (to Coonoor) up the old steep ghaut road may be ridden; or travelled by janpan; or the new road, sixteen miles, may be driven over.

A traveller from Bombay can proceed by rail from the Boree Bunder station (G.I.P. Rail) to Mettapolium. Or he can go by steamer down the coast to Beypoor, and then by rail to Mettapolium. The voyage from Bombay to Beypoor usually takes four or even five days, owing to the steamers of the *British India Company*, the only line available, stopping so long at the many ports on the coast. Another objection to the route is, landing through the surf at Beypoor, which is often a very unpleasant and sometimes even a dangerous business, while the boatmen usually endeavour to make enormous charges. The amount of surf, however, on the Malabar coast depends, *first*, on the season of the year, being greatest on the approach of and during the south-west monsoon; and *secondly*, on the state of the tide, being in most localities less at high water. Beypoor consists of a straggling line of houses, with the railway station at the rear. Over the station there is fair accommodation for travellers. As the train starts at 10.15 A.M. landing after that time necessitates remaining at Beypoor all night. The steamers, however, are now timed so as to arrive generally early in the morning, but this cannot be always attained. From Beypoor to the Pothanoor junction is 105 miles. Most of the rail lies along the southern slopes of the Nilgherries, and isolated hills composed of bare, rain-worn rocks, are the prominent features. From the Pothanoor junction all routes are the same.

The commencement of the ghaut ascent at Kullar

leads to a lovely pass, and the scenery is fine until Coonoor is reached nine miles up the mountain. Coonoor is situated on the crest of the hills, in the south-east angle of their summit, and is not so high as Ootacamund, which is thirteen miles further on. But it is much more beautiful, as the wooded sides of the ghaut run up into a fine peak called the 'Hooliculdroog,' and the views extend far away over the plains. The height above the sea is 6,500 feet. The mean annual temperature is 64°, and of the summer 70°, falling sometimes at night to 60°. The climate is warmer and in the summer more relaxing than Ootacamund, but in the winter it is sheltered from the north winds to which Ootacamund is exposed. The rainfall is also much less, averaging 55 inches, again due to sheltering spurs which run out from the Dodabetta range and interpose between the west and Coonoor. English fruits, as pears and plums, grow favourably, and there are many tea and coffee plantations in the neighbourhood. There are several good hotels. The houses are principally perched on the round tops of hills which run from a high mountain called 'Coonoor-betta,' while the bazaar and native residences are in a hollow below. There is a church with a fine tower, which is a landmark in the view of Coonoor from surrounding eminences. From the post office it is about three and a half miles, in the direction of Ootacamund, to the fine Wellington barracks at Jakatalla. The rides and walks are beautiful but somewhat limited, unless one is prepared to mount difficult heights. During the monsoon, waterfalls are numerous and picturesque, one having an unbroken fall of 400 feet. The principal sight is the Catherine Waterfall, about seven miles distant. At Coonoor the tropical vegetation ceases, and the road to

Otocamund, thirteen miles away, is bare, steep, and skirting for some miles a very deep precipice.

Otocamund has an elevation of 7,000 feet, but the scenery is comparatively bleak and bare. There is not much of that aboriginal forest which diversifies the landscape so agreeably at Coonoor. 'Ooty' itself is situated in a valley or basin, and the surrounding hills, nearly bare of trees, limit the view. An excursion to the summit of one of these hills repays the labour by a grand view over endless stretches of mountainous country, where the prevailing haze of blue previously mentioned is so conspicuous. In the centre of the station there is an artificial lake, formed by bunding streams from the hills, and which is about a mile and a quarter long from east to west, and from three to four hundred yards broad. The shape is serpentine, the bends being caused by the projecting spurs of the hills on either side. A good road eight miles long runs all round this lake, and is the most pleasing drive in the station. The lake is divided into two portions by means of a causeway and bridge known as the 'Willow Bund,' and a marsh at the eastern extremity has been reclaimed, and now forms Hobart Park. But the water at the end of the lake is still somewhat dirty from the entrance of refuse. The roads generally are excellent, and planted with acacia and gum trees from Australia. Many of the houses--of which there are about 350--are surrounded by gardens and shrubberies. The highest of the surrounding hills is 'Dodabetta, to the east, which attains an elevation of 8,622 feet. Other high parts are St. Stephen's Church hill, 7,429 feet; Snowdon, 8,299 feet; and Club Hill, 8,030 feet.

The Nilgerry hills, from their geographical position, come fully under the influence of the south-west mon-

soon; while from their elevation they also feel the north-east. The south-west monsoon is usually ushered in by violent gales, and the rainfall is heavy, averaging 112 inches annually, most falling in June and July. This period, in consequence of rain and fog, is the most unpleasant season. During the intervals between the showers a thick mist usually hangs over the hills, at which time the grass springing forth luxuriantly soon covers the surface of the ground with vivid green. The north-east monsoon sets in about the beginning of October, and is generally accompanied by rain. The months of November and December are often showery and the latter cold; but towards the end of December showers cease and the atmosphere becomes dry. January, February, March, and part of April, are marked by a clear sky and northerly and easterly winds, which in February and March especially are very dry. In the end of April the wind commences to vary to the south-west, and there are often showers again in both these months. The mean annual temperature is 58.69° , or about 1° less than Nice. In the hottest season it seldom exceeds 75° in the shade, but may drop at night to 54° . But the mean range is not more than 9° . The hottest month is usually May, the length of the hot season depending mainly on the time of the setting in of the south-west monsoon. In the coldest months, December and January, the thermometer occasionally marks freezing point at night, but this does not occur very often. The average daily range of temperature at this time between 2 o'clock, the hottest part of the day, and the coldest part of the night, is 16° . Owing to the elevation at which the summits of the Nilgherries stand and the consequent rarefaction of the atmosphere, aided in some degree by the influence of the proximity

of the ocean, the locality, although only 11° from the equator, affords a dry, bracing, exhilarating climate, famed for its remarkable evenness of seasons and its great salubrity. Owing, however, to the same causes, those changes of temperature which do occur are somewhat sudden. Even in the cold season, owing to latitude and extreme dryness of the atmosphere, the sun's rays have great force. It should be remembered that the low temperature of these hills especially is due to altitude and not to latitude, and that the rays of the sun are almost vertical, and are not to be braved with impunity. After sunset, especially in the winter, the atmosphere feels suddenly cold. The radiation of heat from the earth then commencing produces the greatest degree of cold a little before sunrise, after which the sun's rays speedily heat the earth and again raise the temperature of the air. Thus even in the comparatively equable climate of the Nilgherries invalids must be cautious to guard against such changes. The chief station, Ootacamund, from its greater elevation, is more exposed to these unfavourable influences than the lower and more sheltered localities of Coonoor and Kotagiri.

A great advantage of the Nilgherries as a sanitarium is the means afforded to invalids of selecting the kind of climate most suited to their condition or constitution. Owing to differences in altitude, locality, aspect, and surrounding physical features, there are well-marked variations of climate within easy access. Thus an individual whose condition renders a change from the fervent heat of the plains to the greater cold or damp of Ootacamund inadvisable, has the opportunity of sojourning at the warmer locality of Coonoor before exposing himself to the more bracing atmosphere of the higher elevation. As a general rule, delicate per-

sons will, in the first instance, derive most benefit from the milder climate of Coonoor. But the climate generally is suitable for almost *any* complaint contracted on the plains, excepting confirmed liver or dysenteric affections, and is particularly favourable to children. A sudden feeling of exhilaration and increased strength is generally experienced on first ascending the hills, sometimes amounting to a degree of excitement which prevents sleep. Many invalids mistake this primary effect for a permanent renovation, and are apt to eat and drink too freely, or to expose themselves too rashly, which may be followed by an attack of bilious diarrhœa. Another effect of the change of climate is often a copious secretion of urine, and when this occurs it should be a warning that the system requires more protection against cold.

At Ootacamund there are several hotels and a club, also numerous bungalows for hire. The water supply is chiefly obtained from distant hills, and brought into the station by an open waterway. Hence it is liable to pollution from buildings on the course, and should be well filtered. There are botanical gardens about one mile and a half from the post office. There is also a cinchona plantation at Dodabetta, from which a grand view is obtained over the station and valley of the Mayar to the east. Other points of interest are Keli, five miles to the south-east, and Munkutti Peak, fourteen miles by road to the west. This locality is held sacred by the Todas, as the residence of the 'keeper of the gates of heaven.' On the north side of the mountain is a perpendicular precipice of 7,000 feet. Stone circles, something resembling Druidical remains, are also found in the hills, and are objects of interest to many.

Pachmarhi.—Pachmarhi is a mountain of the Sat-

poora range in the Hooshungabad district, Central Provinces. The village of Singanamah, at the foot of the Pachmarhi mountain, is eleven miles from its summit, and about thirty miles from the Piparia station on the G.I.P. railway. The distance from Nagpoor, the capital of the Central Provinces, is fifty miles. At the Piparia station there is a good travellers' bungalow, and there are also bungalows *en route* between the railway station and the foot of the hill.

The plateau where the Pachmarhi station is located is a saucer-shaped basin, with slightly elevated edges. It is park-like and well wooded, about four miles long by about two broad, and is apparently formed by the upheaval of a vast bed of sandstone. On the north the plateau is bounded by a ravine which is 800 to 1,000 feet deep, with perpendicular scarps of reddish sandstone. On the east side is a precipitous gorge, into which the stream draining the plateau falls. On the south and south-west the plateau ends in five perpendicular cliffs of red sandstone, some being 1,500 feet high. To the west the boundary is less clearly defined, as the plateau breaks up into a wild mass of rocky ravines, which stretch gradually to the plains below. The Denwah river, a very beautiful stream, takes its rise in the wild ravines of the south-west corner, and the whole locality presents some very beautiful drives and walks, the scenery being characterised by sandstone precipices, deep ravines, and in the monsoon many cascades.

The altitude of the inhabited part of Pachmarhi is about 3,500 feet, the average rainfall 75 inches, and the mean temperature 71°; of the three winter months the mean temperature is 39°, of summer 78°, and of autumn 64°. May is the hottest month, but the

nights are always cool. The months of October and November are exceptionally lovely, and during the monsoon season the fog and mist are much less than at the Himmalayan stations. The soil is light, porous, and sandy, with good natural drainage. The station is quite habitable all the year round, and the climate is just that likely to benefit those requiring change from the plains, and who yet shrink from the greater cold of the higher Himmalayan hills. Children thrive very well at Pachmarhi, and all maladies are benefited except confirmed liver and dysenteric affections.

Pachmarhi is the summer head-quarters of the Chief Commissioner, Central Provinces. There is an hotel, and usually several houses for rental.

Shillong is situated on the Kosyah hills, and is the sudder station of the division, and the residence of the Chief Commissioner of Assam. It is distant by the Gowhatty route from Calcutta, 603 miles (viz. rail to Goalundo, 151; steamer to Gowhatty, 389; and road to Shillong, 63); by the Chuttuck route, 893 miles (viz. steamer to Chuttuck, 817; country-boat to Zheriah, 34; road to Shillong, 42). The locality is an irregular plateau, composed of a series of knolls, shut in on all sides except the north by higher grounds. The houses are built on the tops of the knolls, the sides of which are more or less covered with fir trees, while lower down there is jungle and marsh, now much improved by drainage. The elevation varies from 6,000 to 6,400 feet. The average rainfall is 70 inches, and rain falls during six months in the year, accompanied by much cloud and mist. The highest temperature in the shade is 81°. The water supply is good from hill streams. It is a temperate and enjoyable climate, and although rather cold in the winter months, and damp

during the wet season, is not subject to any sudden changes. The views of the snowy Himmalayas, particularly in October and November, are beautiful, and the green undulations of the locality partly clad with pine forests, with a distant prospect of the Brahmaputra river, are much admired. But from its position, few persons except those employed in Assam ever go to Shillong. The climate is beneficial in most maladies except confirmed liver and bowel complaint.

About twenty miles south is Cherra-Poonjee, which, although only 4,500 feet high, has a rainfall of upwards of 600 inches. This results from the mountain facing the Bay of Bengal, and receiving the first downpour from the clouds passing over the plains of the delta of the Ganges and Brahmaputra. A sanitarium once formed at Cherra-Poonjee was given up, in consequence of the excessive dampness of the atmosphere.

Simla.—Simla is 22 miles north-east of Subathoo, and about 80 from Umballa. From Umballa to Kalka by road is 38 miles, or about five hours' drive. Simla communicates with Kalka by two roads—a bridle path *viâ* Kusowli, 40 miles; and a cart road, 57 miles, usually done in eight hours by tonga. The hill gradient varies from two to seven feet in a hundred, bullock carts taking three days, and coolies two days or more, to accomplish the distance from Kalka. Between the plains and Simla the hills are almost devoid of trees, and the change is very remarkable when, after making the last ascent, the traveller finds himself under the shade of forest trees as he takes the circuit of Jakko hill before attaining the central part of the station. There are travellers' bungalows *en route* at

Dharampur, 14 miles from Kalka, and at Solon, 30 miles from Simla.

The Simla range may be regarded as a ridge running in a south-easterly direction from the higher to the sub-Himalayan mountain system. The ridge again is composed of a series of ridges and smaller spurs, having on the whole a crescentic form, culminating to the east in the massive peak of Jakko, and to the west in another peak known as Prospect Hill. Close to the west base of Jakko, the ridge gives off a spur to the north, which is known as Elysium; another spur runs east from Jakko, connecting this mountain with the Muhassoo range, five miles distant. The locality may, therefore, be regarded as a series of ridges and spurs, open on the north-east to the snowy range, and on the west to the plains, which are distant in a direct line 40 miles. The total area of the station of Simla is about six square miles. The hills are well wooded by forests of oak, deodar, and rhododendron, and the station presents a striking aspect, most of the houses gleaming light and white from dark-green foliage. The distant views are also very fine. The valleys immediately north and south are beautifully wooded, and across the latter the Kusowli and Subatho hills appear close at hand, while beyond these on a clear day the plains of Umballa are distinctly visible. To the south-east is the great Chor mountain; to the east the Muhassoo ridge clothed with deodar forest confines the view, but to the north are seen the ranges on the other side of the Sutlej valley covered with dense forest, and backed in the distance by the magnificent line of the snowy range.

The geological formation consists of metamorphic rocks, indurated shale, conglomerate, limestone, and

mica schist. The average height is 7,100 feet, the top of fir-clad Jakko being 8,000 feet, and Bishop Cotton's school 6,500 feet. The rainfall is irregular, ranging from 50 to 100 inches, but the average is about 76, accompanied by much fog and mist. The mean annual temperature is 60°. During the hot season the thermometer frequently attains 85°, and may rise to 90° by day. In the cold season it may sink to 22° by night. In such a locality there must of course be good natural drainage, but the sanitary condition has long been the subject of complaint. Similarly with the water supply, which, however, has been, and will be, much improved. As regards occupation and amusement, there is no lack at Simla. The best ride is probably round Jakko, while for those who do not wish to go so far there is the Mall. Tennis courts, rinks, assembly rooms, picnics, dances, concerts, theatricals, drums, and dinners, render Simla more suited to the strong and robust than to the delicate and feeble.

Yet the climate is certainly not without its inherent sanitary excellences. From the middle of March and April, when visitors flock to Simla, the season is characterised by fresh and cool mornings and evenings, with bright and pleasant days. May is warm and dry, the midday temperature ranging between 70° and 80° in the shade. June is the hottest month, when, as mentioned above, the temperature may rise to 90°. In the middle of June light rains fall, succeeded by pleasant weather. Early in July the regular rains commence, which last with breaks till the middle or end of September. During this period the hills are often enveloped in clouds, and the damp is trying to delicate persons, who, and especially children, often suffer from diarrhoea. Towards the end of September

the rains cease, the clouds vanish, and bright, bracing, exhilarating weather follows. October is perhaps the period when Simla appears most beautiful, when the neighbouring forest scenery of deodars, firs, oaks, and damask rhododendron, and the distant snow panorama, are seen in a pure atmosphere to most advantage. In November there are usually slight frosts, but the weather continues bright till the middle of December, when snow falls slightly. In January and December there is more snow and frost, with intervals of sunshine. But the air is pure and exhilarating; and although the cold is at times intense, and a couple of feet of snow may be on the ground, the dryness and stillness of the atmosphere render this period healthy for ordinarily robust persons, or even for those invalids who are naturally not very sensitive to cold.

Notwithstanding all these advantages, Simla has during late years rather retrograded in public opinion as a sanitarium, having become too crowded for the limited sanitary arrangements hitherto practicable, especially as regards conservancy, and the large unfortunately situated bazaar, which is in the centre of the station. But the climate is beneficial in all cases of malarious disease unaccompanied by organic change, and generally for all requiring bracing after prolonged residence in the plains. It is unsuitable for declared bowel, liver, heart, or lung complaints. Almost all ailments of children are benefited, excepting diarrhoea or dysentery. Experience shows that certain affections of delicate children are further benefited by residence during the cold weather, marked improvement often occurring after the first fall of snow. In the cases of weakly delicate children, but free from any chest affection, the question of remaining during the winter

at Simla may always be considered under medical advice. There are numerous trips into the interior of the hills which may be made from Simla. Chini, 140 miles away, is famed for its dry, elastic, congenial atmosphere and moderate rainfall, the climate being bracing and healthy, surpassing, it is said, that of Switzerland.

CHAPTER II.

TROPICAL MARINE SANITARIA.

A CONSIDERATION of the forms of disease mentioned as benefited by Indian hill climates, renders it evident that there are numerous maladies for which hill climates are unsuited, and to which they may even prove injurious. Such diseases are: chronic rheumatism and neuralgia, affections of the heart, bowel complaints, as confirmed diarrhœa and dysentery, and nearly all varieties of liver affection. For these maladies a change from the hot, arid, dry atmosphere of the Indian plains to the sea coast is more desirable, and it frequently happens that a change of the kind is very beneficial, which has led to the proposed establishment of Marine Sanitaria. But the sea-coasts of India can never become sanitary stations in the full acceptation of the term, for the tropical heat and diurnal variations of temperature to which the coasts are subject must ever prove deleterious to the mass of invalids. It is true there is not the dry heat of up-country to contend with, but there is a damp heat which, after a short period, proves almost as exhausting; and although the mean temperature may be lower, the changes consequent on the recurring sea and land breezes with the intervening calms are greater. The variation between

the calm stagnant air of morning and (to healthy persons) the cool refreshing sea-breeze of midday and evening, is too great for the majority of invalids ; who, inspirited at first by the moister atmosphere of the coasts, soon discover that the debilitating effects of the constant damp heat are not less than the trial of the dry atmosphere of the inland plains. Then the land winds, which are always north-easterly, are even more injurious than the calms and sea breezes taking their place during many hours of the twenty-four. Marine stations in India cannot therefore be classed as health resorts, excepting for a short period in the hot weather, when, as before observed, a change from inland dry districts to the moister atmosphere of the sea, may be beneficial in incipient liver or spleen complaints, and for recurring malarious fever, but not, as a rule, for bowel complaints. Similar remarks apply to floating sanitarium which have been suggested ; also to voyages within the tropics. For those who are not sea sick, and who like a sea life, who require change, and who have no confirmed or decided disease, a voyage round the Indian coasts may, it is admitted, prove beneficial. But if there is any confirmed or decidedly diseased organ, a more radical change of climate is required ; as, for instance, the trip to Australia. But such a journey should not be lightly undertaken ; for the sufferings of an invalid on board ship are manifold and continuous. It is painful to see a debilitated, feeble person, struggling with the inconveniences of ship-board life. It may be hoped the time will come when all passenger ships will provide better for the comfort and care of sick passengers. Separate cabins, with extra attendance and good sick cookery, would be a great boon to helpless invalids,

especially when suffering from dysentery, diarrhœa, or lung disease. Such persons when at sea ought to be in a cabin alone, not only for their own sake, but for that of others. To breathe constantly in a confined and badly ventilated space the same atmosphere as persons so affected is dangerous to the healthy, to whom disease may be propagated. It may be admitted that no air is so pure—not even the air on the top of a mountain many thousand feet high—as that which is breathed a good distance from land on the deck of a vessel. There is no dust or pulverised manure to inhale as in towns, no products of vegetable or animal decay as in the country, no marsh emanations, no germ-laden fogs. Inside the ship it is, however, different. There may be filthy bilge water, bad ventilation, and all the evils of an unhealthy, badly ventilated and badly drained house. All depends, as in houses, on the ventilation and cleanliness of the ship. The benefit derived during day on deck may be lost during the night spent in a close, stuffy, unventilated cabin. The larger the ship the easier it is to attend to all sanitary rules necessary for the health and comfort of her inmates. For a health trip sailing ships are best, as being more free from the various nuisances inseparable from the steamer. Moreover, the passage is not so rapid, and changes of climate being more gradual are less felt, while passengers are more likely to make themselves comfortable for a long voyage in a sailing ship than for a short one on a steamer. Lastly, it may be remarked that the advantages which sick persons are supposed to obtain from the ozone and iodine presumed present in sea air is infinitesimal. Whatever effects ozone and iodine produce in temperate climates, the results from these

presumed atmospheric conditions are in the tropics *nil*. When benefit is derived from a change to sea air, that benefit results directly from a pure, less heated, and at first from a moister atmosphere. But that benefit may be altogether negatived, as above shown, by unsanitary conditions.

CHAPTER III.

HEALTH RESORTS ABROAD.

A CONSIDERATION of localities and climates in Great Britain, and *en route* from India to England, shows, that while there is abundance of choice for an invalid suffering from the diseases of a northern climate, such as lung and bronchial complaints, there is comparatively little choice for the person suffering from tropical maladies, as liver diseases and intestinal disorders. For other affections common to both climates, as dyspepsia, debility, urinary maladies, gout and rheumatism, there are also numerous localities from which to select. But the question of suitable climate is not sufficiently studied, and in these days of quick transit, under the idea that a change 'home' is all that is necessary, the tropical invalid too often rushes into the colder climate of Europe, or of the British Isles, the sudden change being in many instances as likely to do harm as good. A person in robust health, or with perhaps little the matter, may pass from the tropics to the temperate zone without injury, and often feeling benefited and enjoying the change. But the tropical invalid, especially if his malady is of long standing, or if he is organically diseased, cannot endure these sudden changes with impunity. And although it is often right that as a last resort they should be made, they

can only be attempted with a chance of success, under the greatest care as regards regime and protection from cold. For the vital energy is often brought so low, that the system cannot accommodate itself to the alteration of climate, and the constitution may be so debilitated by tropical heat, that a return to a cold climate may cause a renewal of, or even excite, morbid activity in an organ previously diseased, or disposed to disease. Thus both liver and womb disease are sometimes re-excited, or even originated. Again, it is most injudicious for a person suffering under any predisposition to organic disease to return home in the winter. As a rule, invalids should not reach England till after the vernal equinox, for the gales at that time are often bitterly cold, and are very apt to induce congestion of internal organs.

The climates of Indian hill stations do not differ so much as the climates of different places in Europe, either as regards general or local peculiarities, and there are many things to be taken into consideration when determining the place of sojourn in Europe, which do not demand so much attention when the question is an Indian hill climate. As previously remarked (page 2) the principal requirement in India is to escape heat. But invalids should not select a residence in Europe, and especially a winter residence, from thermometrical data only, which is the principal point to be attended to in India. In Europe it will be necessary to consider, more particularly than in India, whether a sheltered or an open spot is required, whether the air should be bracing, or somewhat mild and relaxing. Also if exercise is desirable, whether or not it can be taken under suitable circumstances; for it is not sufficient for many invalids to reside in a sheltered spot, but it is also

requisite for them to have some equally sheltered place for drives or walks. The nature of the soil also requires consideration, as a large rainfall would not be so great a hindrance to exercise on a chalky or gravel surface as on a clay soil. It is a common error to suppose the atmosphere of a place must necessarily be humid if there is a large rainfall, whereas the dampness depends more on the ground stratum and on drainage than on the actual amount of rain. The drainage of the locality, natural and artificial, also of the house, must therefore be taken into account, as well as the water supply. Lastly, it should be recollected that the climate which will do harm or good is often extremely localised. Not only may the wrong district be chosen, but the wrong town, the wrong part of a town, the wrong house, or even the wrong room. A place may be unexceptionable with regard to its general character and climate, but nevertheless there may be numerous situations in that place in which the benefits of both climate and locality may be more than neutralised by different causes, such as crowded parts, low damp situations, eastern or northern aspect, imperfect ventilation, and adjoining massive buildings or neighbouring hills.

Similar causes affect the temperature of different localities in any given radius. The temperature of many of the places as quoted can therefore be only regarded as generally approximate. For it is found that meteorological observations, especially those of the thermometer, differ considerably. This depends on the position of the instrument. If in an elevated position and exposed to the wind, the mercury will rise higher during a warm south-west wind, even if accompanied by a cloudy sky, and the mercury will sink lower during a north-east wind, even if accompanied by sunshine,

than would be the case if the instrument were in a less elevated position, and not exposed to the wind. Then again, the errors arising from solar and terrestrial radiation must be recollected. Heat is radiated a considerable distance from soil, walls, or even grass illuminated by the sun, and this radiation affects the thermometer however carefully it may be covered, and the maxima of temperature are thus often rendered too great. On the other hand, walls, pavements, and other conducting masses radiate at night the heat they have acquired by day, which again affects the thermometer, rendering the minima too high. A few yards' difference of position, the angle of a wall, a stone pavement, the colour of adjacent objects, free perflation or otherwise of air, the kind of protection, if any, afforded, and many other apparently trivial matters, do to some extent influence thermometrical readings. Hence the figures given by different observers for the same places, although agreeing in the main, are not always identical. Even in the records of mean winter temperature of London as much as two degrees difference is found—a difference doubtless depending on locality and surrounding circumstances. The most careful and scientific observations carried on under different conditions, even if only a few yards apart, will not give exactly similar results, although affording a general result sufficing for all practical purposes.

There is another important point to which the attention of those seeking change of climate should be directed, viz. the necessity of adopting a regimen suited to the malady, as without it the curative influence of the climate may be entirely lost. There is little advantage to be obtained by change of climate if hygiene is not studied. Many works written on health

resorts have a tendency to foster a delusion that such a locality or such a climate is a panacea for a certain class of diseases. The result is, that persons make desperate efforts to reach the desired climate, and then, throwing aside all medical directions, do as they like, and fruitlessly expect to be restored to health by the mysterious influence of climate alone.

Even English people who do not travel abroad as invalids, often do their best when abroad to become so. Their reckless exposure to the fierce rays of the southern sun is proverbial in the remark of the inhabitants of continental cities, that ‘only mad dogs and Englishmen are seen in the streets at midday ;’ and many Anglo-Indians, appearing to think that after an Indian sun they may brave any solar heat, are often among the most incautious. Again, the British traveller when streaming with perspiration will walk straight out of the sun into an icy cathedral or draughty gallery, and sit down to undergo the dangerous process of cooling himself, which not unfrequently, by the sudden check to the action of the skin, results in bowel complaint or fever. Instead of practising that moderation in eating and drinking more essential to health the warmer the climate may be, he often feeds voraciously on board ship, and essays every novel dish at *table d’hôte*, while he temporarily quenches and permanently increases his thirst with bottled ale, or with brandy and soda. It is the same with the women. They do those things which they ought not to do, and when they do not recover rapidly, or when they become laid up with fever or dysentery, instead of blaming themselves, they blame the climate. Temptations of the table will probably first assail the invalid from the East on entering the cooler atmosphere of the Mediterranean, or

when he begins to experience benefit from the change. But whatever may be the ailment, the digestive system will partake in a greater or lesser degree of the general debility present. Under such circumstances the returning appetite cannot be indulged in with impunity, or without the penalty of dyspepsia. The luxuries (if any), therefore, of the P. and O. dinner, or of the *table d'hôte*, should be ventured upon sparingly. A caution* which with returning health and strength will result in the re-establishment of a healthy digestion, instead of the continued dyspepsia which may be brought on by indiscriminate indulgence at first.

Other equally weighty matters are, the amount of clothing to be worn, and the exercise to be taken. As regards the former, the quantity of flannel underclothing worn should be so regulated as to avoid chill, and if wet with perspiration the clothing should be changed, and not be allowed to dry on the person; and especial care should be taken to keep the lower limbs and feet warm. Exercise to be beneficial should be regular and moderate, and not taken directly after a meal, few invalids having sufficient nervous energy for the digestion of food and for exercise at the same time. Exercise should also be stopped short of fatigue. If carried so far as to induce perspiration, great care should be taken to avoid a sudden chill; as may happen from passing into cold buildings, or from turning a corner from a sheltered spot to a more exposed one; or even from passing out of the sunshine into the shade, especially if sitting down in the latter. Again, invalids and children should not take exercise before breakfast, and their exercise should be followed by rest.

With regard to mineral waters, it may be remarked that they are usually a complicated medicinal agent,

containing various salts and sometimes gases blended together. These ingredients are of course obtained from the rocks and soils through which the water passes. Mineral waters are chiefly beneficial from the action they exert on the bowels, increasing the processes of secretion and excretion, and thus tending to purify the blood. Some varieties, especially those containing iron, have tonic properties; and some kinds act on the skin. But mineral waters are chiefly useful in chronic disorders, especially when the liver, stomach, intestines, or kidneys, are in fault. Chronic gout, rheumatism, sciatica, and other forms of neuralgia, are also often benefited by mineral water baths. Much of the good, however, resulting to invalids frequenting the spas of Europe, depends more on the change of scene and air, the exercise taken, the bathing, the mental rest obtained, and the regular life observed, than on the actual use of the waters. A remark which is equally applicable to the hydropathic treatment. As a rule, it is incumbent on the tropical invalid to give the greatest consideration to the climate, and not to go to a bad or unsuitable climate for the sake of drinking a water which may be regarded as suitable to his case; and unfortunately many of the spas of Europe do not present those peculiarities of climate which the tropical invalid requires. It should be recollected, that many mineral waters may be purchased, while climate cannot be imported. And although it is with some truth stated that mineral waters never prove so beneficial as when used at their source, this should not lead to the sacrifice of climate for a minor advantage.

The typical tropical invalids are: *first*, those who have been suffering from nervous debility induced by long-continued exposure to tropical heat, or arising

from over-work, or from both causes, a condition characterised by general ill-health, depression of the vital powers, and dyspepsia, and sometimes failure of the memory and mental faculties; but unaccompanied by structural or organic disease of any important organ. *Secondly*, those who have suffered from ague or periodical fevers, followed by a more or less strongly marked anæmia, or a bloodless, pallid condition, impaired appetite and digestion, and debility, to which state the term 'tropical or malarious cachexia' has been applied. *Thirdly*, those who, either with or without fever, have suffered from spleen or liver enlargement or congestion, with the accompanying dyspeptic manifestations. *Fourthly*, sufferers from chronic diarrhœa or dysentery. *Fifthly*, from chronic rheumatism. *Sixthly*, females who, as the result of heat, relaxing climate, malaria, nursing, or other debilitating causes, are suffering from weakness, or from congestion, or from other affections of internal organs; a condition marked by pains in the back, pallor or sallowness, indigestion, neuralgia, nervousness, depression of spirits, watery or bloody discharges, sometimes hysteria, and perhaps diarrhœa. In all such cases the question is, where to go after leaving India? And grave mistakes are frequently made.

As a rule, the class of invalids *first* mentioned require dry, cold, and bracing climates, as the more northern continental resorts, Carlsbad, Marienbad, Bagnères, Wiesbaden, Luchon, the Engadine; and in Great Britain, Llandudno, Aberystwith, Scarborough, the higher sites near London and Scotland in the summer. If mineral waters are thought necessary, the ferruginous springs of Spa, Marienbad, Luchon, Homburg, Scarborough, Tunbridge Wells, Cheltenham, and

Brighton, are most indicated. In the *second* class of cases, a bracing, invigorating atmosphere is also requisite, but more caution is necessary, for the very element of cold bracing air which is so essential to eliminate malarious poison from the system, may if applied too early prove injurious by consolidating incipient and perhaps unperceived mischief of internal organs. For such persons a residence at Pau, or on the Riviera, or at Vichy, and in England in the warmer suburbs of London, or at Cheltenham or Bath, is advisable. And when the time arrives for a change to a more bracing climate, the avoidance of chill by suitable clothing is most important. For this *second* class of cases, the mineral waters above indicated are equally efficacious. For the *third* and *fourth* class of cases—sufferers from liver, spleen, and bowel complaint—the objects to be kept in view are, while securing a cooler atmosphere than the tropics, the maintenance of a free action of the skin. Hence the climate which tends directly to stop such action cannot but exercise an injurious influence. Instead, therefore, of the colder bracing air advisable for the maladies mentioned above, the patient should remain in a milder, warmer, and more relaxing one. Of such places there are abroad Egypt, the Riviera, Malaga, Pau, Vichy, Baden-Baden, Wiesbaden, Biarritz; and in England the Isle of Wight, Hastings, Bournemouth, and the Devonshire coast, while inland Bath or Cheltenham will probably be the best. For various forms of liver and spleen disease, the saline waters of Carlsbad, Ems, Baden-Baden, Cheltenham, and Bath have an established reputation. But for dysenteric affections, no mineral waters are desirable, except perhaps, in exceptional cases, those containing alum. With regard

to the *fifth* class of patients, those suffering from rheumatism, a warm and at the same time a dry air, and a locality well protected from northerly and easterly winds, is most suitable. Many of the places beneficial for hepatic and dysenteric affections are well adapted to chronic rheumatism. The waters of Bath, Buxton, Matlock, and Harrogate, and, on the Continent, of Aix-la-Chapelle, Aix-les-Bains, Baden, and Vichy, are desirable; but with the exception of Bath, Aix-la-Chapelle, Aix-les-Bains, and Vichy, the climates of the localities are not particularly so. For the *sixth* class of patients, the localities and climates suited for the first class are generally applicable.

Some of the localities afterwards described are noted for excellencies of climate and some for excellencies of mineral waters, and some few localities there are where a combination of both advantages may be enjoyed.

Aix-la-Chapelle is forty-three miles south-west of Cologne, situated in a valley between the Rhine and Mass rivers. It is 450 feet above sea-level, and is surrounded by gently rising hills clothed with verdure. The environs abound in pleasant drives and rides. The climate is somewhat moist and relaxing. The waters are both hot and sulphurous, and cold and chalybeate. The former are principally used as baths. The maladies benefited are skin affections and scrofulous complaints, chronic gout, rheumatism, kidney and spleen affections, female derangements, and the ill effects produced by the use of mercury. Old sprains, and stiffness of joints the result of injury, are also improved by these waters. The season begins in June and ends the middle of September. Few tropical invalids would be benefited at Aix-la-Chapelle, except

when suffering from the maladies mentioned above, as neither the climate nor waters are suited to liver or dysenteric complaints.

Aix-les-Bains is situated in Savoy, on Lake Bourget, at the foot of Mount Revel, eight miles from Chambéry, twelve from Geneva, and thirteen hours from Paris. The town is 780 feet above the sea, the surrounding country being very pleasing, with varied walks and drives. The locality is also sheltered. The climate is mild but bracing, particularly good from April till October, and comparatively good during the remainder of the year. There are two chief springs, one sulphurous and slightly saline, the other containing a minute proportion of alum. The temperature of the water is about 115 Fahr. They are chiefly used externally, and are valuable in rheumatism, skin affections, nervous disorders, old wounds and ulcers, and for rigidity of joints occurring after injury. Aix-les-Bains is also much frequented by invalids with deranged digestion, scrofulous affections, nervous complaints, and general weakness from excesses, long-continued suckling of children, &c. The climate is well suited for Anglo-Indian invalids affected as above. The alum water may also be useful in long-continued dysentery or diarrhœa.

Algiers is situated on the southern shore of the Mediterranean, on the slope of the Sahel Mountains, having the form of an amphitheatre and presenting a very fine appearance from the sea; a succession of dazzling terraces rising from the water contrasting with the bright green background of the Sahel, explaining the origin of the Arab comparison of Algiers to 'a diamond set in an emerald frame.' It consists of two distinct towns, the Algiers of the Turks and the Algiers of the French. The first consists of the old

Moorish town with its white houses on the slope of the hill, with narrow and very steep streets, extremely dirty but picturesque, with its Oriental architecture, and surmounted by an old Kasbah ; the other, the new French town below, with its regular streets, boulevards, quays, and squares of modern construction, forming a striking contrast to the ancient Moorish city.

The new town is built around two squares ; the smaller one known as Place Bresson ; the larger one, oblong in form, as the Place du Gouvernement. One of the sides of the oblong is open to the sea and commands a fine view of the bay, harbour, the peaks of the distant Atlas, and the verdure of the nearer Sahel slopes. The harbour itself is capacious and sheltered, and little inferior to the Bay of Naples. The mean temperature for each season is : winter 56° , spring 67° , summer 77° , and autumn 63° . From the records of thirteen years kept at the military hospital, it appears that during the six winter months the average mean temperature was : for October $68\frac{1}{2}^{\circ}$, November 60° , December 55° , January 54° , February $55\frac{1}{2}^{\circ}$. Only once in the month of January did the thermometer descend to 32° . The highest temperature recorded was in October 97° , in November 84° , December 77° , January 77° , February 75° , March 82° . The rainfall is 36 inches, and rain falls on about 96 days during the year. But as a rule the falls are heavy and seldom of long duration, and fine drizzling rain is uncommon. The soil of the neighbourhood is of an absorbent nature, and the slope of the surface favourable to drainage, so that wet ground, even after heavy rain, does not long prevent out-door exercise. As a rule the rain and the cold come from the north-west ; the north-east winds so dreaded in Europe being almost unknown, and harm-

less when they may appear. There is nothing in Algiers answering to the mistral of the Riviera. The north-west winds are tempered by passing over 500 miles of sea, and do not rush direct from snowy mountains. The sirocco or desert wind is in winter merely a pleasantly warm dry breeze: it may, however, be disagreeable in spring and autumn, while in summer it is sometimes distressing. But this wind rarely lasts more than three days at a time; and when it is not blowing, the nights even during the hottest season, are cool and refreshing, although the heavy dew requires to be guarded against. Hail storms occasionally occur in the cold season, but no snow is seen except on the summits of the distant mountains. Thunder and lightning also sometimes occur, but are usually slight. Fogs are rare in the cold weather although common in summer, and one degree of frost is the most ever known. The climate is also very equable, the daily range being small. February and March are usually variable and wet, not unlike an English autumn, with more sunshine and rain, but little dampness. April and May are delightful, being neither too hot nor too cold, and have been compared to perfect English summer weather. June, July, August, and September are practically rainless, the last two months being hot and often unpleasant from the sirocco wind. October and November afford what would be considered the loveliest summer weather in England, with occasionally very heavy rain. December and January are very enjoyable, dry, cool, and bracing, but free from raw cold. Compared with other points on the Mediterranean, Algiers has a warmer and less varying climate than either Nice, Genoa, or Naples.

The value of the Algerian climate consists in the

purity of the atmosphere, the splendour of the light and sun, the combination of sea air with warmth, and the permanence of fine weather, so that there are few days in which the invalid may not be out for some hours. It has been pronounced to be the best, or almost the best, place in the world for consumptive or delicate invalids to winter in. This estimate of the climate cannot, however, be fully endorsed, for although admittedly a good one, there is too much rain and cold at some seasons and too much hot wind at others, while within certain limits the climate of the winter season varies, so that unreasonable grumblers have said, 'no one season is like another.' It would also seem that the cold which does occur at Algiers, is much more felt than comparative cold would be in England. The climate even of Algiers must be assisted by the would-be convalescent by the precautions of wearing suitable clothing, especially about sunset, of not sitting down to rest in shade when heated by exercise; in a word, by avoiding chills in any form. Then the climate will be found generally beneficial in consumption, especially at the commencement of the disease, in throat affections, for asthma, for bronchitis, and for gout, rheumatism, and kidney disorders. Being too stimulating, it is not well suited to head or heart affections, or threatened apoplexy, or to epileptic or convulsive disorders, or to internal female derangements. Tropical invalids with enlarged spleen, or suffering from the effects of malarious fevers, will be benefited, but the climate is not advisable if there is either liver or dysenteric disorder, or for the first class of patients mentioned at pages 80 and 81.

The invalid will find many objects of interest in and about Algiers. The town is filled with a strange

mixture of various races, Arabs, Jews, Turks, Spaniards, and Moors, who will long be surveyed by the stranger with interest and amusement. The beauty of the surrounding scenery is also a constant source of enjoyment, vegetation is extremely luxuriant, and the surrounding hills are covered with various kinds of fruit trees, as date, pomegranate, bananas, oranges, and limes. The rocks are trellised with creepers, and nearly every plateau has a Moorish house on it embowered in verdure, each enjoying the command of excellent water, which is conveyed to all parts of the town and to the immediate suburbs from a distant hill source. The Moorish houses should, however, be avoided as residences. They always strike cold, the windows are too small, and the rooms are aired and lighted from a central court. They are built to keep out the summer sun, and not to keep the inmates warm in winter, and the drainage is usually bad. The last remark is indeed applicable to the drainage generally of Algiers, many of the houses not being free from effluvia, and typhoid fever sometimes occurring. The best-drained locality, both from natural position and artificial means, is the beautiful suburb of Mustapha Supérieur, which enthusiasts term 'the Torquay of the future.' It is on the Sahel hills, the greatest elevation being about 600 feet; but villas extend down, under the name of Mustapha Inférieur, even to the sea. The views from most parts of it are lovely, extending over a wide range of country to the snow-covered summits of the Djurdjura mountains. The rent of the villas is however high, varying from 300 to 1,000 francs per month. Even here there are few really good hotels or *pensions*, while those near or in the town are very indifferent as compared with the Riviera. A recent writer states, the accommodation is

so ordinary that Algiers is a better place to pass through than to stop at, and that a great relief is experienced when the atmosphere of the town is changed for a certain height on the Mustapha slope.

There are plenty of pretty walks and drives in the immediate neighbourhood, and various places to which day excursions may be made. Those wishing to do so may also make longer journeys into the interior. About sixty miles from Algiers is a place known as Hummam R'irha, where there are hot and cold mineral springs. Hummam R'irha is on the southerly face of a mountain 2,000 feet above sea-level, is surrounded by picturesque scenery, and the atmosphere and soil are very dry. The hot springs have a temperature of 115° , and contain sulphates and carbonates of lime and magnesia. The cold springs are slightly gaseous, contain a little iron, soda, and magnesia, and are mildly aperient. A fair hotel has been recently established, and the place can be reached from Algiers in a few hours by rail, the last seven miles from the nearest station being done by carriage, or in two days by road. The climate and the waters used as baths have a great reputation for the relief of chronic rheumatism and chronic bronchitis, also for some forms of skin disease.

Baden-Baden, the Roman Aurelia Aquensis, is two miles from Oos, six from the Rhine, and eighteen from Carlsruhe. It is situated on a slope above the Oosbach, and among the lower hills of the Black Forest. The sides of the hill above the town are dotted with bright villas and gardens; other hills covered with tall dark pine trees rising to a height of almost 2,000 feet. The elevation of Baden-Baden itself is only 600 feet, and the town is protected from the east and west. There are in consequence some few degrees more of thermo-

metrical heat in the valley of Baden than in the flat country near and out of it, and vegetation is at least two weeks earlier; but the air is pure and dry, although occasionally felt oppressive in the summer season. Like most mountainous regions, Baden is often threatened by thunderstorms, but frequently, from the peculiar disposition of the higher hills, such storms pass over the locality. The buildings for visitors are on the south side of the river near the mineral springs, and there is a fine promenade and pleasure grounds. There can be but one opinion as to the beauty of the situation of the town of Baden, or of the generally fine tonic bracing climate during the summer months. The season is from the beginning of May to the commencement of October; but after this time the climate and ground are damp, as the granite subsoil will not absorb water. Perhaps, excepting Carlsbad in Bohemia, Baden-Baden is the most fashionable lounge in Europe, the scenery, the shelter afforded in summer, and the warmth of the locality in winter, attracting large numbers of visitors, notwithstanding the drawbacks of occasional oppressive atmosphere in the former season, and of dampness in the latter. The lovely walks and drives in the locality also exert their charm on invalids, while the good fishing and shooting to be obtained are inducements to convalescents. The climate of Baden-Baden, especially in the summer, is well suited for the majority of tropical complaints, spleen and liver maladies being frequently much benefited. It is also favourable to internal female disorders. There are thirteen hot springs, the principal of which is the Ursprung, containing chloride of sodium, carbonate of iron, and lithia. The waters have a reputation for rheumatism, gont, urinary disorders with tendency to lithic acid deposits, stomach complaints, and

derangements of the digestive organs, and for some skin diseases; but their internal efficacy must be slight. They are principally employed as baths, hot or cold, when such agents are needed for rheumatic affections, contraction or stiffness of joints, and for some skin diseases, while the patient is enjoying pure air and fine scenery.

Bagnères de Bigorre is at the foot of the Pyrenees, about 35 miles south-east of Pau, at the commencement of the valley of the Adour, being neither in the mountains nor yet in the open country. It is about 1,820 feet above sea-level, and is embraced by the last sloping hills as they terminate in the valley, having the fertile plains of Tarbes stretching in front. It is well protected from cold winds, yet the climate is cool and especially delightful from June to September. The mean summer temperature is 64° , but there are considerable variations between the day and the night, which require caution from the invalid. There are hot saline, ferruginous, and a sulphurous spring. The saline waters contain carbonic acid, chlorides of magnesium, and sulphate of soda. There are delightful drives and promenades; the principal of the latter, Salut, affording the shade of trees.

The climate during the summer is well suited for consumptive and bronchial complaints, and both climate and waters are efficacious in abdominal and digestive disorders; also for hypochondriacal and melancholic persons. The locality may indeed be recommended to most tropical invalids, and in the summer to those affected with chronic affections of the liver and spleen. For the first, second, and sixth class of patients, mentioned at pages 80 and 81, it is especially suitable.

Bagnères de Luchon.—In the Pyrenees, three hours.

by rail from Toulouse, eighty-five miles from Pau, and forty-three from Bagnères de Bigorre. The situation, although 2,000 feet above the sea, is a valley surrounded by high mountains. The general appearance is 'as if the best bits of the Bois de Boulogne and the Boulevard des Italiens were thrown down in the midst of the grandest and fairest of mountain scenery.' On each side rise noble mountains richly wooded to their tops, and the valley is closed in by inaccessible rocky peaks remarkable for both form and colouring. The floor of the valley between the mountains is literally an inhabited park or garden. Broad rows of houses are partly concealed and shaded by double avenues of trees. The hotels are surrounded by gardens illuminated at night by the electric light, dining tables are laid out in the open, and bands of music play to the diners and promenaders. Bagnères de Luchon is in short decidedly a town of pleasure, and is often called the 'Queen of Pyrenean health resorts.' The climate is mild but bracing during the months of May, June, and September, but in July and August the valley becomes hot and oppressive. The waters are sulphurous, and there are numerous springs, varying in temperature from 152° to 62°. Some of the springs also contain a small proportion of iron. They are used in a variety of ways, drinking the waters being but a small part of the curative processes for which the waters and the gases are employed. The waters are chiefly efficacious in chronic skin diseases, for stiffness of limbs after injuries, for gunshot wounds, to which they are said to prove very beneficial, for ulcers, chronic rheumatism, scrofulous affections, female complaints, anæmia and hysteria. The climate is most suitable for the first and sixth classes of patients mentioned at

pages 80 and 81. There are many excursions through beautiful scenery to be made in the neighbourhood, but not suitable to pedestrians, as all the roads except one lead up-hill, while carriages, and indeed all things, are very expensive. Those who go to Luchon must take Iago's advice and 'put money in their purse,' for the thirst of the natives for the stranger's coin is great.

Bareges is forty-seven miles from Pau, and consists mainly of one long street, built by the side of a *gave* or torrent, the Gave-de-Bostan. The height above the sea is 4,200 feet, and the locality is much exposed to storms and mists, being inclosed by steep, pine-covered, and snow-tipped mountains, from which in the winter and spring avalanches sometimes fall. The waters are saline and sulphurous, and they have a reputation for cleansing foul ulcers, for remedying stiffness of joints, for rheumatic pains, for piles, jaundice, and venereal diseases. But the climate is scarcely to be recommended for any but tourists in good health, and certainly not for tropical invalids. In the winter the town is deserted even by many of its usual inhabitants.

Besides these principal places, there are other localities in the Pyrenees where mineral waters are found, as Eaux Bonnes, four or five hours' drive from Pau; Eaux Chaudes, five miles from Bonnes, and Cauterets, in the High Pyrenees, at an elevation of 3,250 feet. But none of these places present attractions to invalids from the tropics. According to ancient historians, Hebe and Venus maintained the immortal freshness of their charms by bathing in these Pyrenean waters; and according to some enthusiastic but questionable local authorities, the Pyrenean waters would still appear sufficient 'to convert disease into health, age

into youth, and fifty into fifteen.' But the nature of the climate is such, that tropical invalids can rarely avail themselves of such advantages.

Biarritz is on the shores of the Bay of Biscay, five miles south-west of Bayonne, and sixty-five miles from Pau. It can be reached from London in forty-eight hours. The air is usually dry and warm, but there is always an invigorating breeze from the sea. The town is sheltered from north-east winds to some extent by cliffs, from which there is a fine view over the Bay of Biscay, and inland of the dark chain of the distant Spanish mountains. Biarritz was a favourite resort of the Emperor Napoleon III., and it is regarded as an excellent summer and autumnal resort, and comparatively eligible during the winter, although the gales from the bay are at this season often severe. It may be recommended for most forms of tropical ailments, especially for the remains of dysenteric and diarrhœal affections, and in the summer and autumn for liver malady.

Bordighera.—*See The Riviera.*

Cannes.—*See The Riviera.*

Carlsbad, or 'Charles' Bath.'—This town is situated in a narrow winding valley on the banks of the Töpel, seventy miles north-west of Prague, and is about 1,200 feet above sea-level. The locality is surrounded by lofty granite hills, clothed to the summit with forest, and presenting a highly picturesque appearance. The town consists almost entirely of hotels, lodging-houses, cafés, and shops. There are numerous shady paths, and a fine avenue of trees leads through the valley towards Marienbad. The season extends from the beginning of June to the end of September. Early and late in the season the weather is often cold and

wet, rendering thick coats and strong boots indispensable ; but the summer weather is delightful. * There are several important springs, differing chiefly in their temperature, the average heat being as much as 140° Fahr. The principal salts are sulphate of soda, sulphate of potash, chloride of sodium, and carbonate of lime. One of the springs contains a little iodide and bromide of sodium. The Carlsbad waters are very strong and rich in mineral matters, so that the salts are easily procured by evaporation. The waters are usually taken early in the morning. The affections most benefited are liver diseases, and abdominal complaints, depending on torpidity or sluggish action of the bowels. Anglo-Indians with enlarged livers and tendency to jaundice or gall stones, often derive remarkable benefit from Carlsbad water, or from the salts procured from the water. Spleen enlargement is also usually benefited. Dyspepsia, particularly if attended by constipation and piles, is always lessened, and so are usually sciatica, gouty and rheumatic affections. The waters are also useful in most forms of internal female complaints, not of an inflammatory nature. Urinary disorders with tendency to gravel or stone are also maladies for which the waters are frequently prescribed.

Baths of the cooled mineral waters are now seldom resorted to, although formerly in great request. But sometimes peat soil from the neighbourhood mixed with water from the Sprudel spring is used as poultices. Peat or mud baths are also given, but Franzensbad, two hours distant by rail, has a greater reputation for this mode of amusing valetudinarians.

If the climate of Carlsbad were as suited to tropical invalids as the waters, Carlsbad would be a very favourite residence for such persons. But, except in

the midsummer months, the climate is not to be recommended, and the majority of invalids from the tropics will do better by remaining in some more genial climate, and if necessary using the waters or salts as imported and sold by most chemists. During the midsummer months few localities are on the whole better suited for tropical invalids of almost any description than Carlsbad.

Como.—The Lake of Como is exceedingly lovely, surrounded, except at its southern extremity, by lofty mountains stretching down from the Alps. It is situated a few miles to the north-east of Milan. Bellaggio, a promontory at the junction of the two arms of the lake—sometimes called Lake Lecco, and Como—is perhaps the most charming spot, the locality being one mass of gardens. Most of the villas about the shores of the lake are surrounded by gardens and tropical vegetation. The air is genial and mild, and the heat not oppressive, owing to the alternate play of the *tivano*, or north wind, during the night, and the *treva*, or south wind, in the day. But there is a considerable change of temperature between the day and the night, and the wind often comes in violent gusts from the mountains. Sudden thunderstorms also occur in the summer. The cold in the winter is great, especially at the northern end of the lake. The summer season is suitable for consumptives and asthmatics, but the climate is not well adapted for invalids from the tropics.

Dinan is an old town situated in the most beautiful part of Brittany. The position of the town is singular and picturesque, on the crown and slopes of a steep granite hill, overlooking the deep and narrow valley of the Rance, flowing 250 feet below. The sides of the hill are excessively steep; but notwithstanding

this, houses and streets extend on the face of it to the water's edge. Dinan has been compared with Clifton near Bristol, because similar natural, and in some degree artificial, features give the ruling character to both places. These are, a narrow river between high banks clothed with foliage, from which peep numerous villas, and a bridge over the river, the view at both places from the bridge being regarded as curiously alike. Here, however, the similarity ends, as the streets of the town of Dinan are narrow, crooked, roughly paved with uneven boulders, and often very filthy, and the town abounds with quaint, mediæval-looking buildings, while Clifton has regular-built, straight streets, broad even pavements, good roads, and no buildings of antiquarian interest.

At present Dinan is inconveniently placed by being twelve miles from the nearest railway station, Caulnes, but a branch line is near completion which will connect Dinan with Dol. Perhaps it is the isolated position of Dinan which has rendered it noted for comparatively cheap living, which although more expensive than formerly, is still sufficiently moderate to attract numbers of English, who, as a recent writer observes, 'getting away from their rich friends and relatives,' may here enjoy picturesque scenery and a good climate. There are, however, no sufficient excellences of climate to induce tropical invalids of any special class to resort to Dinan; but as the air is mild and genial, and the locality warm in winter, most invalids newly arrived from the East may, if in quest of economical living, sojourn at Dinan without injury and with probable benefit to health. As regards occupation and amusement, the convalescent if artistically inclined may find numerous picturesque bits of scenery

or building, for the pencil or brush. Then there is a Casino in which weekly balls are held, an English club, and a band every Sunday playing in the Place du Guesclin. Bathing and boating may also be managed in the Rance, and excursions are feasible at little expense to St. Malo, or to Dinard, a fashionable French watering place, being a Deauville or Trouville on a small scale.

Egypt.—As Egypt extends over several degrees of latitude and presents various physical peculiarities, it necessarily affords several grades of climate. The two great distinctions are, however, heat and moisture in the Delta or Lower Egypt, at the north-west verge of which Alexandria is situated; and heat and dryness in Middle Egypt, the capital of which is Cairo; and heat and dryness to a still greater degree in Upper Egypt, extending from the town of Manfaloot to above the cataracts of the Nile. In the Delta, and at Alexandria especially, there is an abundant rainfall, occurring between October and February, and usually amounting to about eight inches. As compared with Middle and Upper Egypt, the atmosphere is much more moist, both in consequence of the rain and the proximity of the sea, while the temperature is lower than in Middle Egypt by about three degrees, the mean being 68° Fahr. As Middle Egypt is reached the rainfall grows less, the moisture disappears from the atmosphere, and the temperature is raised. Alexandria formerly possessed a reputation for salubrity, but at present the sanitary condition alone is sufficiently bad to negative any advantages which might be derived from the climate. Cairo is in Middle Egypt, and lies on the right bank of the Nile, 90 miles west of Suez, and 131 from Alexandria. It is dominated by 'El-Kaleh' or the citadel, built on a high rock to the south-east, from which a

magnificent view is obtainable of Cairo, immediately below; of the Mokattem chain of hills, stretching in broken links to the Red Sea; of the Delta, expanding far away to the lakes; of the Nile; and of the pyramids and their background of Libyan desert. In few parts of the world are the changes effected within the past few years so striking as in and around the capital of Egypt. Handsome streets, gardens, and villas, with all the adjuncts of European civilisation, have been brought into immediate contact with the conservative Orientalism of the city and surrounding country, which in many respects is still displayed as in the time of the Caliphs.

At Cairo, and in Middle Egypt generally, the climate may be divided into the hot season, extending from March to October, and the cold season, comprising the remaining months. At Cairo especially the climate is little variable, perhaps more uniform than any other in the world, rain falling on eight or ten days only during the year, the total fall being scarcely one inch. The mean annual temperature is 71° , or three degrees higher than Alexandria. The mean night temperature is lower than that of the day by 12° in the hot season and by 8° in the cold, the fall rapidly following sunset and continuing till sunrise. November is perhaps the most delightful period, for although December and January are cooler, the nights and mornings are comparatively cold, owing to the sudden fall of temperature referred to above. Frost and snow are almost unknown, but occasionally a little ice forms, and hail-storms sometimes occur. In the winter time portable stoves are often desirable, as neither chimneys nor fireplaces are found in many of the houses. February and March may be favourably compared with a fine English sum-

mer, although the direct rays of the sun are hotter. From the end of March to the end of May a hot wind frequently blows, called by the Arabs *simoom*, but generally spoken of as the *khamsein*, the Arabic word for fifty, as there are usually so many more or less windy days. A violent *khamsein* gale may continue for two or three days, when the atmosphere is rendered hazy, the sun is obscured by floating sand and dust, and the thermometer may even mark 106° in the shade. During the violence of the *khamsein* green things become shrivelled, and, as during the hot winds in India, wooden materials warp and crack. This wind comes from the south, over the burning sands of Africa, which accounts for its heat. After the *khamsein* the months of June, July, August, and September are hot and dry, the mean temperature being 92° ; but there are no hot winds. October especially is hot, and in the neighbourhood of the Nile somewhat damp, from the marshes left by the river.

During the warmest period of summer the morning air is deliciously cool, but the actual range of temperature between the day and night is rather great; for although, as above stated, the mean is 12° , there is often a difference of 28° between the early morning and the hottest period of the day, and as much as 40° has been noticed. Experience, however, shows that such variations in a dry atmosphere are not injurious, as they would be in a damp one. Although some parts of the year are so hot, the heat is of a different description to that experienced in India. The air seems fresher, lighter, and more elastic, resembling the Northern Indian climate at the commencement of the cold weather; there is always a slight desert breeze, and the lassitude, weariness, and disinclination for exertion, so

often experienced on the plains of Hindustan, is not felt in the Egyptian climate. The northerly summer breezes also waft in the evaporations from the Mediterranean, and these, suspended high in the atmosphere during the day, are deposited at night in an abundant dew, that moistens and cools the air, and in the morning evaporates in light fleecy clouds. The annual rise and overflow of the Nile begins about July, when vast tracts of country are placed under irrigation. When in November the receding Nile leaves large stretches uncovered, fogs are common in the neighbourhood of the rivers, the evenings are damp, and the mornings raw and cold. These fogs, however, are quickly dispelled by the morning sun, and beautiful serene days follow. It is stated that the climate of Middle Egypt has been to some extent altered by the Suez Canal, an assertion which may be certainly received with less suspicion than similar allegations made that from the same cause the climate of the Red Sea, and even of Aden, has become, if not less heated, more subject to rain! Of Middle Egypt it is affirmed that the winters are colder than formerly, that frost is more frequent, and that the *khamsin* wind is less marked.

An invalid from England is usually recommended to arrive in Egypt about the beginning of November, by which he obtains nearly five months' residence in a climate scarcely second to any in the world. Doubtless this would be the best time for an invalid from India to arrive in Egypt. But, after Indian heat, almost any climate will be a beneficial change, and the heat at Cairo does not become unpleasant even to those unseasoned by tropical extremes until the end of April. The accommodation at Cairo for Europeans, notwithstanding all that has been done, is still certainly a

drawback, as the hotels are not free from many nuisances which it would be tedious to describe. But there is the Palais Matatia Mahinan, established by a medical man, on the outskirts of the city, where an invalid may be fairly comfortable. A sanitarium was actually once started in the desert close to the large Pyramid, eight miles from Cairo. But residence there was found so intolerably dull that persons would not remain. At Suez the climate is even drier than at Cairo, but when the hot wind blows it is preferable, as the heat is to some extent tempered by the proximity of the sea. As a general rule, however, the air of Suez is too dry and parching, while the changes of temperature between the night and the day are scarcely less than in other localities further removed from the sea.

The Egyptian climate is especially recommended in the early stages of consumption, for chest affections, for throat maladies and asthma, and for gout and rheumatism. During the cold season it is excellently well suited as a temporary halting place for almost all invalids from India, many of whom have received extraordinary benefit from the semi-tropical nature of the climate. It is, however, perhaps best suited for those who have suffered from ague or periodical fevers, followed by a more or less strongly marked debility or, as termed by doctors, 'malarious cachexia;' also for those who, with or without fever, have suffered from spleen or liver derangement, with the accompanying dyspeptic manifestations, and for whom a rapid passage into the colder climate of the continent of Europe, or of England, is not to be recommended.

The Nile voyage, either to Thebes or elsewhere, is not to be recommended for Indian invalids. It is a slow progress, and both monotonous and expensive, and

the necessity of living in boats entails, even under the most favourable circumstances, certain inconveniences. Some of the Nile boats or 'dhabieh' abound with rats and vermin, and the windows fit so badly that the occupant is constantly exposed to draughts. The nights in the lower part of the Nile are very cold, ice often forming in January; while the sun is very powerful by day, and the reflection from the river and yellow sandy banks most disagreeable. In the cold weather the temperature is found to rise as the Nile is ascended.

Between Cairo and Siout the mean is 2° higher than Cairo, from Siout to Assouan it rises another degree, and in Nubia another degree, so that at the second cataract there is a mean of 4° higher than in Middle Egypt. The air is, however, regarded as purer, drier, and more bracing; and it has been considered that if there is any air or climate that offers advantages for the cure of consumption, Thebes and Nubia possess it. In the hot weather, however, the heat is too intense, and the atmosphere never cools below a point which excludes the district at this period from the list of health resorts. A Nile voyage should be undertaken so as to reach Thebes in the beginning of December, and the voyager should be back at Cairo by the end of March. The principal care to be taken is the avoidance of exposure to the cold and dews of night, and direct exposure to the sun at midday. Flannel should be worn next the skin; also a flannel belt over the bowels, and the Indian 'sun topee' should not be discarded. For external wear a light tweed suit is perhaps the best. Nile water should not be drunk, as it tends to excite diarrhœa, especially at first.

It is not, however, now necessary to navigate the Nile by 'dhabieh.' A traveller may proceed by the

Upper Egyptian railway from Cairo to Assiout, and then by steamer from Assiout to Assouan, or he may go by steamer the whole distance. Assouan is near the first cataract on the east bank of the Nile, and 110 miles south of Thebes. At Luxor, near the site of the ancient Thebes, a good hotel has been established, and if a tropical invalid will 'do' the Nile he cannot act better for his health than by proceeding to Luxor in the most expeditious manner, where he will find an excellent climate, and at least some objects of interest. If he proceeds on the old-established method by 'dhabieh,' he will probably come back a sadder, if not a wiser man.

Ems is 290 feet above sea-level on the right bank of the Lalm, fifteen miles from Wiesbaden. The older part of the town is inclosed in a narrow valley between the river and the cliffs of the Bäderlei, with steep wooded hills on either side. The more modern part on the left bank of the river, and spreading out into open ground, is the most airy and pleasant. Between the town and the river is a long narrow strip of garden, forming a terrace by the water side, and serving as a promenade. But those who extend their walks must begin to ascend the hills, which are close at hand. The atmosphere is mild, but from the narrowness of the valley sometimes oppressive, especially in the autumn; but the woods afford ample shade, and the summits of the hills may be reached in a quarter of an hour, where fresh breezes and an extensive view over Rheinland may be enjoyed.

The waters are alkaline and gaseous, with a temperature ranging from 86° to 133°. They are used both externally and internally. The chief constituents are carbonate of soda, chloride of sodium, and carbonate of magnesia, with small quantities of lime, iron, manga-

nese, potash, and lithia. Their action is cathartic, diuretic, and alterative. They are usually prescribed in the early morning, when the air is fresh, exercise being recommended between the draughts, which should be taken at intervals of a quarter of an hour. The waters are useful for chronic bronchial affections, for skin diseases, and for some forms of dyspepsia attended with acidity. They are also of much reputed efficacy in female affections, as hysteria and nervous complaints, depending on womb malady; also for sterility. They are not promising for tropical ailments, neither is the climate of the locality.

Franzensbad, 1,300 feet above the sea, two hours by rail from Carlsbad, is an ugly place on a bleak moor near Eger. The waters contain bicarbonate and sulphate of soda, a very small proportion of iron, and carbonic acid gas. The chief differences between the waters of Carlsbad and Franzensbad are the larger proportion of carbonic acid in the latter, and the springs being cold instead of hot, from which they have been termed 'cooled Carlsbad.' Mud or peat baths are the great attraction at this place, and may be regarded rather as a means of occupying and amusing valetudinarians, than a real curative agency. Invalids are often recommended to go to Franzensbad after a few weeks at Carlsbad, but there is no sufficient reason why this change should be made, as the vaunted mountain air of Franzensbad cannot be of much utility, the elevation being only 1,300 feet, in the heart of Europe, and the soil being of a moist, retentive nature.

Genoa.—*See* The Riviera.

Homburg is about nine miles north-west of Frankfurt, on a breezy tableland, about 600 feet above

sea-level, and at the foot of the Taunus range of hills, whose pine-clad slopes form a natural amphitheatre at a distance of from two to three miles. Projections of the Taunus protect in some degree from the north, but there is always a fine fresh current of air flowing from the mountains, and in the hottest weather the languor so much complained of at other places situated in narrow valleys is not felt. Even in the months of July and August the air is bracing and invigorating; and although the temperature may be 92° in the shade, the heat is not felt oppressive. The variations of temperature are, however, considerable, and the nights are often cold. The soil is mixed, composed of slate, clay, granite and sand, that in the town being almost entirely formed of sand and granitic detritus, and as a result it is very porous, and drains remarkably quickly. The water supply is ample and excellent, from a reservoir in the hills. The drainage is fairly good, and there is a singular lack of smells in the streets and houses. At the foot of the Taunus, between the hills and the town, is the park, and on the slopes of the hills are many pretty walks and drives cut through the woods which clothe the sides. The great dust on the high roads is a drawback to country excursions. Once in the pine woods, however, there is ample shade, the refreshing scent of the pine, and no dust.

There are five cold springs. The Elizabethbrunnen, which is the water nearly everyone drinks, contains in each lb. (16 oz.) 89 grains of common salt, a small proportion of chloride of magnesia, nearly 17 grains of bicarbonate of lime, rather less than two grains of other saline ingredients, and a quarter of a grain of protoxide of iron. The Elizabeth spring also contains more carbonic acid than any other known. Homburg

is also a bathing place as well as a drinking place. The baths are of two kinds : fresh water, to which extract of pine leaves is added, and mineral baths. The first are merely pleasantly scented warm baths, the stimulating effect which the pine extract is said to have on the skin being questionable. The mineral baths are said to be also stimulating by reason of the carbonic acid they contain ; but the effect of this agent may be doubtful. The maladies principally benefited are gout, dyspepsia, constipation, obesity, hypochondriasm, and internal female irregularities. The waters are also beneficial in cases of enlarged spleen, the sequence of malarious fevers. The climate is suitable in the summer for tropical invalids, unless affected with dysenteric or liver complaints.

Kissengen is situated in a fertile valley of Bavaria, on the Saale, about thirty miles north-north-east of Wurtzburg. The height above the sea is nearly 800 feet, and the position is picturesque, being surrounded by hills, while the environs are very agreeable. The climate is warm but moist, the rainfall being considerable and the ground retentive of moisture. The composition of the waters is complex, but the principal salts are chloride of sodium and sulphate of magnesia, with a little iron. The astounding flux and reflux of the Sprudel spring some eight or nine times a day is one of the sights of the neighbourhood. The waters are especially valuable for habitual constipation, for dyspeptic affections with eructations, for congested liver, gout, and to remove the results of prolonged high living. They are also efficacious in female disorders. About a mile and a half from Kissengen is the village of Bocklett, where there are saline chalybeate waters, beneficial for enlarged spleen and for the debility

arising from malarious fevers. They also have a considerable reputation in female complaints, for the cure of sterility, and for breaking off a tendency to habitual abortion. Neither of these places is specially suitable as regards climate for Anglo-Indian invalids.

Kreuznach is picturesquely situated in the valley of the Nahe. The climate is warm and dry from April to October, but the winter is cold and damp. The waters contain chlorides of sodium, calcium, and magnesium, with a little bromide of magnesium, and less oxide of iron. They have especial repute as useful in uterine and other female affections, and are also highly beneficial for scrofulous maladies, particularly to children. There is no special indication of either climate or waters for tropical invalids.

Lisbon.—Lisbon at one time enjoyed a great reputation as a winter residence, and the climate has been advantageously compared with that of Naples. Without any particularly imposing buildings, with few churches, and only one or two good-sized squares, there are, nevertheless, few more beautiful cities than Lisbon. Rising from the water's edge on its many hills, with its regular rows of tall stately houses, built of a peculiar greyish-yellow limestone, which has nearly the appearance of marble, and with everything looking bright, clear, and clean in the sunny atmosphere, the first aspect of Lisbon is very striking. The city lies in an amphitheatre of seven hills, on the right bank of the Tagus, which is here two miles broad and twelve miles to the mouth. The town is well lighted and paved, and tolerably clean and well drained, and the numerous pariah dogs, formerly so great a nuisance in Lisbon, have now been got rid of. The mean annual temperature is 62°, winter 52°, spring 59°, summer 70°, autumn 62°. The

annual rainfall is 23 inches, most falling in the winter quarter. The prevailing winds are north, east, and south-east. The best situation for a winter residence is the Val de Pereiro, a continuation of the valley in which the newest part of the town and public gardens lie. Here upon the southern slopes of the hills are well-sheltered villas, in the midst of orange-tree groves, and from which there are pleasing views. The neighbourhood of Benifica on the Cintra road, about three miles from Lisbon, is also a favourite locality, on account of the pureness of the air. The climate of Lisbon may be regarded as dry and bracing, though the changes from sunshine to rain, and from heat to cold, are sudden and trying. It is therefore not well adapted for lung or throat affections, neither is it to be recommended for invalids from the tropics.

Cintra, 19 miles from Lisbon, is the summer residence of the court and wealthy inhabitants of Lisbon. Hills and verdure are the principal attractions, together with the sub-tropical gardens at Monserrat, and the palace of Cintra, the Alhambra of Portugal. Frequent breezes, a humid soil, and an abundance of vegetation, render the summer air cool and enjoyable; but the winters are wet and cheerless. The tropical invalid should avoid Cintra at all times.

Madrid.—This city is located at a considerable altitude on a bleak plain, exposed to the full force of the sun, and even in the summer to dry, icy cold winds from the Sierra de Guadarrama. When such winds do not blow, the heat is irritating and oppressive. In the winter it is either cold and damp, or frosty with bitterly sharp winds. The daily range of temperature is great, the thermometer sometimes standing below freezing point at sunrise, and mounting to 106° by 3 o'clock P.M.

The most agreeable months are March, April, October, and November. But no tropical invalid should ever go to Madrid. The locality should not be regarded as a health resort at all, and mention of the climate is merely introduced as a warning; because Madrid has been written of as if affording great climate excellences, which it certainly does not possess.

Malaga stands at the head or south-east corner of a bay of the Mediterranean, 65 miles E.N.E. of Gibraltar. The city is semicircled by vine-clad hills, in the midst of a delightful country producing grapes, oil, raisins, figs, almonds, oranges, lemons, and limes, and to the north and east there is a background of lofty mountains, which protect to a large extent from winter winds; while the locality is open to the south and to the sea. The city is divided into two parts by the Guadalmedina, a watercourse which is dry in the summer, and then used as a high road. A little rain, however, transforms it into a torrent, which, in the absence of better sanitary arrangements, tends much to cleanse the city. The rainfall is small, only about seventeen inches; but the air being tempered by the sea breeze is not too dry, as it would otherwise probably be consequent on the small rainfall and the nature of the surface, which allows the water to run off quickly. In summer especially the air is cooled by the sea breeze, which, springing up at sunrise, rarely subsides until nightfall. The mean annual temperature is 66° , and that of the three winter months 54° , or about that of May in London. The principal climatic drawback appears to be the *terral*, a cold wind from the north-west, which occasionally blows during the winter with great force. At such times the hot sun and the cold wind render the climate very treacherous. But when the *terral* does

not blow the climate is mild, charming, and fresh, the air not being confined by lofty encircling mountains, which in some other localities produces a heavy semi-stagnant atmosphere, and a depressing effect on the system. The invalid who requires a warm, dry, and tonic climate, with plenty of sunshine, may visit Malaga in the winter. It is suited for tropical invalids with dysenteric or liver affections; but unfortunately there is not good accommodation for visitors, the only place being the central part of the newer portion of the town, through which runs the Alameda, a broad promenade, bordered by some cheerful well-ventilated houses.

Marienbad, in the district of Eger, Bohemia, five hours' drive from Carlsbad. It is situated in an open valley, surrounded by pine-clad hills and picturesque scenery. The hotels and new part of the town are principally built round meadow land, which has been converted into a *Jardin Anglais*. The altitude is 1,912 feet, and the air is pure and dry; but owing to the height, changes of temperature take place somewhat suddenly. Marienbad is, however, as regards climate, preferable to some other fashionable places, as Baden-Baden for instance. In the latter place the visitor often feels to want space to breathe in. At Marienbad the locality is more open, and the air purer, lighter, and more elastic. After a summer shower, which is not unfrequent, the renewed freshness of the atmosphere carries a balmy fragrance from the surrounding forests; while the deep green by which the white buildings are surrounded, becomes doubly grateful to the eye. The springs are saline, aperient, chalybeate, and acidulous, from 50° to 58° in temperature. The waters are employed both externally and internally. They are useful in constipation, and congestion

of the liver, also in spleen affections, for venereal disease, and for female disorders. Mud baths and poultices are used for chronic ulcers, tumours, and cutaneous affections. The climate is suitable for the first, second, and last class of patients mentioned at pages 80 and 81, and so are the waters. Those with liver or dysenteric affections should avoid Marienbad.

Mentone.—*See The Riviera.*

Monaco.—*See The Riviera.*

Naples, the chief city of Southern Italy. Situated on the shores of its beautiful bay, with a south-eastern aspect, on the slope of a range of hills near the foot of Vesuvius, and with so much delightful around, Naples seems to afford all that is charming to the person in health, but unfortunately much that is pernicious to the invalid. The mean annual temperature is 60° , that of winter being 47° , seldom falling below 40° ; that of summer, 74° , rarely rising above 84° ; and that of autumn, 61° . Therefore, if mean temperature only were to be regarded, Naples would doubtless be as favourable to the invalid as it has often been asserted to be; but in July and August, which are the two hottest months, the thermometer may rise to 85° , and if it were not for the sea breeze the heat would be even greater. Naples is also exposed to the scirocco or south-east wind, which, although seldom lasting for more than three or four days at one time, is enervating to both body and mind. The time when heat is most felt at Naples is during the prevalence of this wind, by the force of which the usual cooling sea and land breezes are masked or suspended. At other seasons of the year the mistral or north-west wind brings raw piercing cold and damp. Snow seldom falls on the town of Naples, or if it does it melts immediately,

but it often lies on the surrounding Apennines for weeks or months; and it is when the wind blows from these snow-capped mountains that the air is coldest and most trying to delicate constitutions. These winds are most prevalent in February and March, when there is the greatest mortality amongst the population. The largest quantity of rain falls during the first two or three weeks of September, when vegetation springs up in great luxuriance. The average number of days on which rain falls in the year is sixty-five, and the total fall about thirty inches. The soil is of a light sandy nature, resting on a porous tufa rock. Hence rain passes off quickly; and as soon as the fall ceases, the invalid may walk dry on the Villa Reale, or in other places. Wells are easily made in this tufous rock, and water is found near the surface, but it is often brackish and liable to excite diarrhoea. It may also become contaminated by faecal matter, as the sewerage and sanitary arrangements are bad. Great care is therefore required as to the source of supply of drinking water, which should be procured from the fountains and not from the wells.

Catarrh, pneumonia, phthisis, rheumatism, ophthalmia, womb affections, and skin diseases, are common among the inhabitants, the causes of which are evident, as partly climatic and partly unsanitary. The idea which has been entertained that Naples is sometimes rendered unhealthy from the atmosphere being impregnated by injurious gases from Vesuvius is not tenable, other causes being quite sufficient to account for the fact that Naples cannot be rightly regarded as a health resort. If the mountain produces any injurious effect, it is in this manner. Thunder clouds are attracted by Vesuvius, and storms succeeded by

calms occur in consequence. The effect of the gathering storm, the reverberating thunder, and the vivid lightning on susceptible nervous subjects is very marked, causing headache, irritability, excitement, and sleeplessness. But ignoring such exceptional drawbacks, Naples cannot be recommended as a sanitarium for either tropical or other invalids, and a mistake has often been made in recommending invalids to go there. As a health resort it certainly does not deserve the name 'Dolce Napoli,' which has been given to it.

Nice.—*See* The Riviera.

Pau, South of France. The town extends from east to west, and is built on a hill or kind of terrace which overlooks the river Gave, at an elevation of 150 feet; and facing the Pyrenees, affords charming panoramic scenery. It is protected on the north by the Landes of the Pont Long, which ascend very gradually to a distance of fifteen miles from Pau. The north wind is thus divided into two currents, which being attracted by the lofty Pyrenean mountains to the south, pass at an elevation considerably above the town, so that the clouds may often be seen rapidly sailing onwards when the leaves of the trees at a lower level are unmoved. On the other hand, the southern wind is broken and cooled by the Pyrenees, which extend at a distance of twenty miles from Pau in a magnificent curve. A continuation of the terrace mentioned above, taking a curved direction, and being wooded, also protects the town in a great measure from the westerly breezes which frequently blow, while an easterly wind seldom occurs. Thus Pau enjoys a stillness of atmosphere so complete as often to lead to doubt in which direction the wind may be. A certain naval captain is said to have left Pau in disgust after

two years' residence, because he had never encountered a capfull of wind during the whole period. But this same stillness of atmosphere allows the sun to beat with great power, so that the pedestrian requires to protect his head with an umbrella. From the same cause, at sundown the evenings feel chilly, and the nights often seem colder than the temperature warrants. The mean annual temperature is 56° , that of summer being 70° , autumn 62° , winter 45° , and spring 58° ; from observations taken at 3 P.M. daily. The ordinary highest temperature is 90° , and in the summer the heat, owing to the absence of wind, is oppressive. The lowest winter temperature is 13° , but this is uncommon, as there are seldom frosts or snow. The variations of temperature during the twenty-four hours are often considerable, but in the absence of wind such variations are not injurious, as they might otherwise be. The mean annual temperature of Pau is 6° higher than that of London, and 4° higher than that of Penzance. In winter it is $3\frac{1}{2}^{\circ}$ warmer than London, and $1\frac{1}{2}^{\circ}$ colder than Penzance. In spring it is $5\frac{1}{2}^{\circ}$ warmer than London, and $4\frac{1}{2}^{\circ}$ warmer than Penzance. Owing to the stillness of the atmosphere there is often a highly electrical condition, manifested by sparks sometimes presenting when the hair is brushed. The climate may therefore be regarded as highly sedative, and to some depressing, and unsuitable for the great majority of tropical invalids, but well adapted for consumptive and bronchial complaints. Numerous excursions may be made from Pau to the mountains and other places. The former may be reached in a few hours, and the Bay of Biscay is only sixty-seven miles distant. But these excursions, involving a great change of climate, are not advisable for invalids.

The Riviera.—The principal resorts on the Riviera proceeding from east to west are Genoa, San Remo, Bordighera, Mentone, Monaco, Nice, and Cannes. The latter place, Cannes, although properly speaking not within the limits of the Western Riviera, is yet so near its boundary and possesses so similar a climate, that it may be conveniently introduced into the group, in a climatic sense. The Western Riviera, throughout its whole extent of about 116 miles, is more or less protected from the north, east, and west by the Maritime Alps, which rise at distances varying from six miles to half a mile from the coast, and which in some parts attain an elevation of from two to three thousand feet. Although all the places mentioned above possess the ordinary climate of the Riviera, most of them also display peculiarities of their own depending on local physical conditions; the main differences being determined by the relative height of protecting mountains, by their proximity to the sea, and by the more or less complete or broken barriers they form.

The Riviera coast is principally a winter resort, the summer there being too hot to render it a desirable residence; and the following is an account of the general winter climate. The prevailing winds are northerly, but unless where gorges or openings in the mountains exist these winds blow over the district, and strike the sea at some distance from the coast. As they touch the higher mountains their moisture is precipitated in the form of snow, and the winds, further tempered by passing over intervening spurs, become very dry. Thus the mean humidity of the atmosphere varies from 70 to 74, against 83 to 90 in London. The north-west wind or ‘mistral,’ which parts with its moisture in passing over Central France, is sometimes experienced,

but not to any great extent, except at Cannes and Nice, which are on the western extremity of the Riviera; this wind being less felt as the eastern direction is pursued. The north-east wind, or 'greco,' is often bitterly cold, but most felt in the neighbourhood of Genoa. The southerly wind or scirocco brings the rain, and the whole coast is open to it. The south-east wind originates in the deserts of Africa, hot and scorching, but in passing over the Mediterranean it takes up much moisture, and reaches Southern Italy as a hot, moist, enervating wind. But by the time it arrives at the Riviera, by its passage over the Apennines and Corsican mountains, it becomes much drier and cooler, although sometimes warm and oppressive. Owing to physical peculiarities, the land and sea breeze, especially in the winter, play with a regularity not generally met with in European climates, and often with something of tropical force. These alternate breezes exercise a considerable influence on the temperature, the sea breeze in the day, and the land wind by night, tending to cool the air. The Riviera therefore often presents the peculiarity of a north wind blowing far overhead from the mountains out to sea, while at the same time a breeze may be blowing low down from the sea to the land, caused by rarefied air ascending the mountains being supplied by the rush of colder air from the sea, but which has not been chilled by passing over snowy hills. But at night a contrary process is in operation, when, the heat of the sun being withdrawn, cool mountain air descends to the sea, forming a land breeze. But this land breeze does not blow with any great force except through the ravines and valleys which lead to the shore. Owing to the deflections of the winds which are caused by the mountains, the

altitude at which the winds blow from the mountains over the coast, and the conflict between land, sea, and other breezes, it is often difficult to determine in what direction the wind really does blow, and observers have had recourse to the wet bulb thermometer, remembering that as a rule northerly winds are dry, and southerly moist. Owing to the extreme dryness, caused, as before explained, by the prevalence of northerly winds in the winter uncharged with moisture, the sky at this period is not shrouded by vapour or clouds, but appears in its fairest light blue colour, which is reflected in the clear waters of the so-called 'blue Mediterranean.' The sun shines forth undimmed, and its rays reach the earth with a force not experienced in winter in corresponding latitudes. From similar absence of clouds, the nights, whether moonlight or starlight, are brilliant. The actual winter temperature of the sea is nearly 10° higher than that of the air, or 57° against 49° along the Cornish coast, and 42° on the east coast of England. This high temperature of the adjacent sea doubtless conduces to the mild climate of the coast. Rain falls chiefly at two periods, beginning near the end of September and continuing at intervals through October, and again in March and the early part of April. The number of days on which rain falls, and the amount of the rainfall, varies at different parts of the Riviera, the variation, as with the winds, being mainly determined by the height, form, and arrangement of the neighbouring mountains. It is always sub-tropical in character—violent while it lasts, but never continuous. The average fall is stated at 25 inches, and the average number of rainy days, by the records of all the places where this has been noted, is 60. As a rule most rain falls in the eastern division

of the coast. At Genoa, for instance, there are 67 rainy days during the winter months, while at Hyères, in the extreme west, there are only 37. But during the winter months the average number of rainy days to which an invalid would be exposed is not more than 30, much of the rain falling, as above noted, during the six summer months. Similarly, owing to local circumstances, the temperature varies at different points, but the average is as follows: Annual mean 60° ; winter 48° ; spring 57° ; summer 72° ; autumn 61° . The mean difference is from 8° to 10° higher than London. The mean minimum daily range is stated at 7° , and the maximum 12° . The extreme range is 20° , half often occurring suddenly at sunset. Frost happens but once or twice during the whole winter; fog and mist are unknown, and snow is very rare. If the above is contrasted with the figures for some of the most favoured localities in England, as Ventnor, Bournemouth, and Torquay, the great advantage to many invalids offered by the climate of the Riviera will be at once apparent. Thus the number of days on which rain falls on the Riviera during the winter six months is much smaller than at either of the English resorts mentioned. The damp is also less, and the winds are on the whole much less trying. On the other hand, the sunshine is more persistent, and the mean temperature 5° or 6° higher. The winter climate of the Riviera may be briefly described as dry, mild, bright, sunny, bracing, and sometimes even cold. The summer period is more dry, but still fresh; it is of course much warmer, but never excessively hot and never close and sultry, yet still too hot for a health resort. If further evidence of the mildness of the winter's climate were necessary, it is to be found in the vegetation, olives, oranges, palms,

Eucalyptus Globulus, lemon trees, all flourishing, and shaddocks, citrons, pomegranates, with other tropical fruits—even the banana in sheltered places—growing in profusion. The extreme mildness of the climate is also shown by many flowers which, annuals in England, here become perennial, some of them rivalling shrubs in size, as petunias, stocks, wallflowers, carnations, and nasturtiums; while heliotrope, magnolia, verbena, and rose, flower in mid-winter. One cannot indeed see the vegetation of the Riviera, in so northerly a latitude, without conviction that the air must be more tenderly tepid, the sky more sunny and clear, the atmosphere more elastic and dry, and the solar radiation richer than in any other part of Europe.

There are, however, drawbacks even to the Riviera. These are: the occasional cold, cutting northerly winds, the north-west wind or mistral, and the north-east wind or greco, one or other more or less felt at most places. *Secondly*, the great difference which is experienced when passing from sunshine to shade. The average temperature in the sun is 129° , and in the shade 56° , giving a mean variation of 73° between a shaded and a sunny spot; a fall which requires the compensation of a thick great-coat. Even a room being in shade or not will make a difference of two or three degrees in the internal temperature. *Thirdly*, although there is but a mean difference of from 7° to 12° in the maximum and minimum temperature of the day and night, and although the extreme range seldom exceeds 20° , the evening fall is very sudden. The departure of the sun and the springing up of the land breeze often causes a difference of 10° in a few minutes after sunset, which may be followed by another more gradual fall of 10° during the night. Even the natives usually carry

an extra garment to put on at sunset, a precaution which should never be neglected. *Fourthly*, are the mosquitoes, which necessitate the defence of nets as in India. *Fifthly*, the houses being without fire-grates and chimneys, which renders the ventilation of rooms more difficult, and entails the use of stoves and wood fires, which give out little heat, and are expensive. *Sixthly*, the fact of many houses being on elevated sites not accessible by carriage, and therefore entailing an ascent exceedingly irksome and trying to most invalids. *Lastly*, all the localities on the Riviera owe their attractions much more to the gifts of nature than to the efforts of man. In all of them it is advisable to live in the less crowded and higher parts, for the conservancy and general sanitation is often so bad that the atmosphere in the lower parts is frequently offensive, if not actually injurious. In forming an estimate of the climate of the Riviera it is necessary to guard against the utterances of occasional visitors. One tells of a perpetual English summer, warmth, sunshine, and open-air life; another of hot sun, cold shade, moist scirocco, iced north winds, and other discomforts. This exemplifies what has been previously stated, that there is no perfect climate, and it also proves that the best climate will not at all times suit all kinds and conditions of humanity and disease. The peculiarities of the different places are mentioned under the respective headings.

Genoa, Genova ‘La Superba,’ marks the eastern termination of the Western Riviera. It is situated on the side of a range of hills, the streets running at different levels, and the ascent of some in the old quarter of the town being too steep for carriages. The view of Genoa is very pleasing, presenting a mass of buildings,

villas, and gardens, with the blue Mediterranean as a foreground.

The annual mean temperature is $60\cdot37^{\circ}$; that of winter $44\cdot75^{\circ}$, of spring $58\cdot60^{\circ}$, of summer $74\cdot03^{\circ}$, and of autumn $62\cdot94^{\circ}$. During the winter period northerly winds are very piercing, as plains intervene between the snowy peaks and the town, admitting cold currents without impediment. Rain falls on 131 days during the year, and snow about six days each winter. Genoa is colder and more wet than any other place on the Western Riviera, and there is almost a complete absence of lime and olive trees, and very few palms, all of which grow at other places on this stretch of coast, thus showing that the climate is not so mild as in other neighbouring but more sheltered positions. Genoa cannot, therefore, be regarded as a suitable winter station for tropical invalids, and is not to be recommended for chest complaints. It is, however, a city of great interest and beauty; it is well supplied with good water by aqueduct, and those who are fairly well and strong would incur no risk, the climate being brighter, more sunny, warmer, and more exhilarating, than can be met with in Great Britain.

Conigliano, three miles from Genoa, and Pegli, about fifteen miles west, are quiet places, near which there are some good houses. The former possesses some attraction as a winter residence, and the latter has become more fashionable since 1879–80, when the Crown Princess of Germany (Princess Royal of England) resided there. Both localities are very similar as regards climate to Genoa, and not to be recommended for invalids from the tropics.

San Remo is situated on the Western Riviera in a beautiful bay of the Gulf of Genoa, 16 miles from Men-

tone, 31 from Nice, and 85 from Genoa. The locality is protected from the north, north-west, and north-east, by a triple barrier of hills and mountains, the lower of which are olive-clad, and the higher ones fir-clad. The third barrier, the Alpes Maritimes, rises to a height of 7,000 or 8,000 feet, and none of these encircling hills have clefts or broad gorges likely to give passage to the wind. The old town of San Remo is one of the seven hills which form the first barrier; but except a main road at the bottom of the town, the streets are narrow and steep. The hotels, villas, and houses are on either side, those to the west standing generally on higher ground than those to the east. The western houses are also nearer the sea, and consequently, being more exposed to the sea breezes, the air on this side is cooler and fresher. On the other hand, many of the eastern hotels and villas are on a lower level, further from the sea, while the land seaward is sheltered by olive trees. Hence this side is much less exposed to the wind, the noise of the sea is less heard, and the air is both warmer and moister. The prevailing winds are northerly, but owing to the height of the encircling mountains, these winds blow over the locality and strike the sea at some distance from the shore. The north-west wind, or dreaded ‘mistral,’ which is occasionally experienced on the northern shores of the Mediterranean, is little felt at San Remo, as it does not reach the town as a purely north-west wind; but, rounding Cape Otero, it comes as a south-west wind, generally cold, bracing, and exhilarating, although sometimes disagreeable from its keenness and accompanying dust. To the southerly winds from the Mediterranean the locality is fully open. The temperature is warm, mild, and equable, giving a mean of 48° for the winter months,

57° for the spring, 72° for the summer, and 61° for the autumn. In 1879 the average mean for the six winter months was 52°, the daily average range 11°; the maximum range being 14° and the minimum 8°. The coldest month is January, but the thermometer rarely sinks below freezing point. The locality is not only protected from the cold of winter, but also to a considerable extent from the heat of summer. The sun rises from the sea facing the town in winter; but as summer advances its gradual progress towards the north brings it behind the mountains, the consequence of which is that the sun rises about an hour and a half later at San Remo than in the more level country, and also rises later in April than in February, so that as the summer advances there are actually two or three hours less of the sun's heat during the day. The rainfall is about 28 inches, and the average number of rainy days annually 48, chiefly occurring in the autumn and spring. In 1879, during the six winter months, rain fell on only 27 days, or during 117 hours, and there were also 16 cloudy days on which the sun did not shine. The climate, therefore, may be described as fresh, dry, bracing, yet balmy and equable; tonic without being excitant, yet both exhilarating and soothing; combining the bracing qualities of Nice with the warmth but without the closeness of Mentone. In addition to climatic excellences the opportunities for exercise are considerable, while the inducements are great, owing to the beauty and variety of walks and excursions. For those who are not strong there are many walks near the town in the olive groves, while the robust may penetrate the hills. The number of drives is, however, limited, but new roads are being constructed. The water supply is a drawback, that of the town being

liable to contamination from drains and cesspools, the wells of the suburb being comparatively pure, but their water requiring filtration.

The climate and locality of San Remo appear particularly well suited to aged people, they being able to take daily walks and to enjoy the sunshine; also to all cases of simple debility, and to convalescence from fevers and other exhausting maladies. Affections of the chest and lungs or throat are always benefited. Maladies of the kidney are also usually improved, and so are gout, rheumatism, and scrofula. The climate is not to be recommended for persons of a full habit of body, or for those having an apoplectic tendency. Diseases of the heart and its valves are in the same category. Furthermore, the climate, from its moderate character, and the absence of extreme heat and cold, is singularly well suited for persons who have lived many years in tropical countries, especially for the second class of patients mentioned at pp. 80 and 81. The colder months may also be recommended for either dysentery or liver affections originating in the tropics. In the winter it is just fresh and cold enough to stimulate and brace the vital powers weakened by hot climates, and in the summer it is not hot enough to depress.

Bordighera.—On the Western Riviera, five miles from San Remo, and ten from Mentone. There is a new town and an old part, the latter built on the promontory of Sant Ampeglio, the new town being below the old, and extending in a straggling manner westward on either side of the Genoa road. To the north, Bordighera is protected by a low range of hills; but to the west and east, although there are hills and numerous palm trees, there are several gaps or openings.

The exposed position of the old town, and the generally imperfect protection from the north, east, and west winds, render Bordighera colder than either Mentone or San Remo, which are better protected; but further observations are required to determine relatively the temperature of these places. Bordighera is also less dry than some other Riviera localities, the space between the hills to the north and the sea being of considerable extent, perfectly flat, and almost on sea-level, and therefore damp, especially after rain. Hence the climate is somewhat sedative, and probably better suited to cases attended with much nervous excitement than some of the other towns of the Riviera. Bordighera is yet to be developed in the matters of roads, buildings, &c., and is not a place where the invalid from the tropics should stay.

Mentone is situated on the shores of the Mediterranean, at the foot of the Maritime Alps, and about a dozen miles east of Nice. Mentone lies to the south-east, near the centre of a bay, about four miles across, bounded on the east by the Pointe de la Murtola, and on the west by Cape Martin, which reaches an elevation of 223 feet. Mentone is surrounded by a series of olive-clad hills, rising to about 1,000 feet, which again are protected by the higher mountains behind. These higher mountains, which attain in the Bercean their greatest elevation (3,350 feet), are bare, but of varied outline. Behind this semicircle, but invisible from the town, is the chain of the Maritime Alps, rising to a height of 5,000 or 6,000 feet. Mentone, like San Remo, is therefore protected by a triple chain of hills, those of which are visible attaining their greatest elevation near the centre of the semicircle. The centre or

widest part of the space inclosed by the mountains surrounding Mentone is about two miles, and this space, as well as the bay, is subdivided into an east and west portion and bay by the spur of one of the higher mountains which runs out, and on which the old town of Mentone is situated. The eastern subdivision is the smallest, extending from the boundary bridge of St. Louis to Pointe de la Murtola; and the mountains rising abruptly at a comparatively short distance from the shore, and there being no break in them, the protection afforded is complete. There is an extended frontage to the sea, with carriage drive and esplanade, and the space between it and the mountains is well covered with buildings, hotels, villas, and *pensions*. The western portion may be described as consisting of two parts, divided by an avenue of plane trees. On the right or west are many hotels. On the left the Carei valley is crossed by a bridge, and the Avenue Victor Emmanuel leading to the town is entered. The western bay comprises a much larger space than the eastern, the mountain shelter being further removed and of a less protective character, being pierced by the valleys of the Carei and Boorigo. The scenery up these valleys is fine; near the entrance of the first, and for some distance on each side, villas have been erected. There are also villas near the entrance of the Boorigo channel, some sheltered, some less so, but none well suited as residences for invalids.

Owing to the division of Mentone into two parts, as above described, the climate can scarcely be treated as a whole from a medical point of view. The general climate of course resembles that of the Riviera—warm, bright, sunny, dry, and stimulating; but the eastern side, being more protected from cold winds

descending from the Alps, enjoys an exceptionally warm temperature, the mean of the six months of the winter season being above 52° ; somewhat higher than recorded of any other locality on the Riviera. In twenty-seven years the thermometer marked only three times below freezing point. But this warmth is obtained at the cost of a free circulation of air. The western bay, from its being less protected, is cooler and more windy, the valleys in the mountains giving access to northerly breezes, and the western extremity being somewhat open to the mistral. The sun shines later in this part, however, and being more level there are greater facilities for exercise. The variation of temperature between the two localities is from 3° to 4° ; so great altogether is the difference of climate, that it is not considered prudent in the winter for invalids to pass the limits of the eastern bay. The rainfall amounts to 23 inches, but the number of rainy days annually, viz. eighty, is larger than at some other neighbouring localities. A winter residence on the eastern side and a summer residence on the western are desirable for invalids with lung affection: chronic rheumatism, kidney complaints, and gout are much benefited. Mentone is better suited for tropical invalids than any place on the Riviera except San Remo, and affections of the liver are usually more benefited here than by almost any other continental climate.

Monaco is situated on a small elevated promontory, which stretches into the sea about ten miles from Nice and five from Mentone. The old town is on the ridge, a castle crowning the central highest point. At the termination of the promontory are some pretty public gardens with a terraced walk overlooking the

sea. To the eastward is the Casino, on the summit of a small hill, below which is the village of Monte Carlo, about a mile away.

The old town of Monaco, standing high on its promontory, is comparatively much exposed to winds, but both this part and Monte Carlo with the neighbouring villas are protected from the east by hills. The climate is much the same as that of Nice ; and although Monaco has been rightly termed ‘a pearl of beauty,’ it is not the place for a tropical invalid to establish himself, unless merely seeking relief from debility the result of heat or over-work, and not suffering from any special malady.

Nice.—Nice is open to the south, and encircled by surrounding hills. Its river, gardens, and villas nestling among olive-clad hills, with the blue Mediterranean in front, and the islands of St. Marguerite and St. Honora, and with the snow-clad Alps in the rear, combine in forming a scene of surpassing loveliness. But notwithstanding this most beautiful of situations, Nice has been overrated as a sanitarium. The area inclosed by the circling mountains is very considerable, which lessens the protection from the north, north-east, and north-west, they would otherwise afford. Moreover none of the hills attain to any great elevation, the highest, Mont Chauve, being only 2,700 feet. Thirdly, there is a complete gap to the north-east formed by the valley of the Paillon river, through which the ‘bise’ or north-east wind is admitted to the city ; and on the north-west another depression through which the ‘mistral’ or north-west wind finds access, which at some periods is very cold and cutting and attended by clouds of dust. Thus, although protected to some extent like Mentone and San Remo, it

is much more exposed to objectionable breezes. A high temperature combined with such winds is not indeed, in a sanitary point of view, so satisfactory as a lower temperature without such winds would be. When the north-east and north-west winds blow, the city is peculiarly liable to sudden changes of temperature, somewhat trying to even those in health, and positively injurious to many invalids. The variations of temperature when passing from sunshine to shade, especially when wind is blowing, are remarkable, and there is always a considerable variation of temperature between the day and the night. The environs of Carabacel and Cimiez are perhaps less affected by winds than other places. But Cimiez, three miles distant, is built on a ridge about 400 feet high, and is exposed on its eastern side to winds blowing down the valley of the Paillon. Carabacel is situated at the foot of the ridge, has a south-westerly aspect, and is much less exposed. The average annual mean temperature of Nice is 59° , that of spring 55.92° , of summer 71.83° , of autumn 61.82° , and of the three winter months 46.33° . The maximum temperature in July and August is $88\frac{1}{2}^{\circ}$, the minimum in January $27\frac{1}{2}^{\circ}$. It is therefore colder than San Remo or Mentone. The rainfall amounts to 23 inches, taking place chiefly in October and November, and the number of rainy days is seventy, being greater than at most other places on the Riviera. The rainfall during the winter at Nice is greater than in London, although the number of rainy days is less. The number of cloudless days at Nice during the winter is ninety-six, against twelve in London. The spring months are comparatively dry as contrasted with some other neighbouring situations.

The Paillon river, mentioned above, divides the city into two parts, which communicate by several bridges; some of the land is in places lower than the bed of the river, and, especially on the right bank, is frequently irrigated. Persons living in Nice have contracted malarious fever, which is believed to have originated from the damp ground in the neighbourhood of the Paillon, and which is principally occupied by foreigners. In the lower parts of the town, especially about the port, the sewerage is bad, and smells most offensive. One of the most recent modern additions to Nice is a long shaded boulevard by the sea face. But Nice cannot be recommended for tropical invalids. For those who are in good health there are few cities more delightful than Nice, whether as regards climate, natural beauty, or society. But hot in the sunshine, cold in the shade, hot in the day, cold at night, the wind excessively changeable, the climate in short resembling 'an iced summer's day,' Nice is not to be recommended for any form of tropical malady, except simple debility from over-work or heat.

Cannes.—About twenty miles south-west of Nice, beautifully situated on an undercliff between the Mediterranean and the hills, which shelter it from the north. The old town lies near the sea on the eastern slope of the hill, from either side of which along the shore and up the hills of the vicinity houses and villas extend, the western extremity being the English quarter. The villas, of all styles of architecture, are dotted about on the wooded hills in picturesque positions surrounded by forests of garden, in which roses, myrtle, almond, and peach may be found in full bloom in January. The coldest winter temperature is 55°, there is little fog, and sunny days are the rule, but the

climate is regarded as more sedative and moist than Nice. The lower parts of the neighbourhood are to be avoided, as being damp and undrained. There are extensive sands and good bathing from little wooden huts, horse machines not being required, as there is no tide. There are many walks and drives, that by the chapel of Notre Dame and through the pine avenue being a favourite route. A sea excursion may also be made to the island of St. Marguerite, famed as the residence of the man with the iron mask, and more recently of Marshal Bazaine. Cannes is well suited for tropical invalids, except the malady is of a dysenteric character. Rheumatic affections are usually especially benefited if care is taken to avoid chill when passing from hot sunshine to shady places.

Rome is situated on the Tiber, seventeen miles north-east from the river's mouth in the Mediterranean. The city is separated by the Tiber into two unequal portions, which are again divided into quarters. The walls are twelve miles in circumference, and pierced by twelve gates. Modern Rome is the portion north of the Capitol. The three principal thoroughfares diverge from the Piazza del Popolo, and the central of these, the Corso, extends for nearly a mile.

The mean temperature of the three winter months is 44.86° , of the spring months 57.74° , of summer 75.20° , and of autumn 62.78° ; being respectively about 5° , 8.12° , and 12° higher than London. July and August are the hottest months, when the thermometer in the shade may mark 93° . Snow is not common, and seldom lies for more than a few hours. Frosts occur in December and January, but are not of long continuance, being more the effect of radiation under a brilliant clear sky than of a freezing atmosphere as in

northern latitudes. The thermometer in an ordinary winter seldom falls lower than 25° Fahr. The average quantity of rain is sixteen inches. October is the most rainy month as to quantity, and November as to number of rainy days. Upon an average of several years, rain falls on 95 days, 155 are fine, 122 cloudy, of which 88 are sunless. In regard to moisture, therefore, Rome cannot be regarded as damp from rain, although position and the nature of the soil render it so. Also, owing to the prevalence of various winds, the variations of temperature are great and sudden. The north wind or *tramontane* prevails often for a considerable time during the winter and spring. When moderate it is not injurious to healthy persons, but it is often harsh, penetrating, and cold. The *scirocco* or south and south-east wind is sometimes dry, at others moist; and although producing little injury in the colder months, the oppressing effects during other parts of the year are markedly debilitating. The malarious influences which prevail are still worse features of the Roman climate. Malarial fevers are most common from the beginning of July to the commencement of October. While the actual cause of the fevers of Rome is attributable to malarial poison, arising from the swampy nature of the neighbouring country, the most usual *exciting* cause is exposure to currents of cold air or to chills in damp places, especially after the body has been heated by exercise, and is in a state of perspiration. Exposure to the direct influence of the sun is also an exciting cause, especially of relapses. The care with which the Romans avoid the sunny side of the street and exposure to the sun generally is the result of experience. It is a saying that none but English people and dogs walk in the sunshine at Rome. It would be well if visitors

followed the example of the inhabitants, for the rapid transition from a powerful sun to shady streets open to the keen spring winds is very prejudicial. Similarly visits to cold churches, and the still colder museums of the Vatican and the Capitol, to the ancient baths, or the catacombs, are fraught with danger to the invalid. The skin becomes chilled, and the blood, forsaking the surface and extremities, is forced upon the internal organs, when any weak or diseased part must suffer from the strain. To act as many do during their visit to the 'eternal city,' plunging perspiring into cold museums, or into chilly catacombs, is simply to court illness.

In consequence of the fall of temperature occurring after sunset, and the consequent danger of chill, natives of Rome agree in regarding the hour immediately following sunset as the most unhealthy time of the day; and in autumn especially few expose themselves to its influence without extra clothing. Owing to the changes of temperature experienced at Rome, it has been stated that the interior of St. Peter's Church is the only suitable atmosphere for an invalid, where, although cold, no variation is experienced.

The most fitting localities for a temporary sojourn are the north and west sides of the Piazza di Spagna, as having a southerly exposure. The neighbourhood of the Tiber, which overflows in winter, should be avoided. The second and third storeys of houses are preferable to the first, as they are both more exposed to the sun and higher above the influence of malaria. In selecting their places of residence invalids cannot be too careful in avoiding damp quarters, and should bear in mind the Roman saying, that 'where the sun does not enter, the physician must.'

From the foregoing description of the climate of Rome it will be seen that it is not the locality for a tropical invalid. The climate, although mild, is relaxing, oppressive, and malarious, and no one who has ever suffered from ague, or fever, or spleen affection in India, should enter Rome. Dyspeptic and hypochondriacal affections are usually made worse; and the climate, especially in the hot season, is prejudicial to persons who have suffered or who are suffering from diarrhoea, dysentery, or liver disease. In addition to the malarious fevers incidental to the locality, typhoid fever often prevails in Rome. The only malady which is benefited is chronic bronchial complaint. It is unfortunate that the climate of Rome should be unsuited to invalids, as there is scarcely any place which the majority of people are so desirous of visiting, or to which so many associations, both ancient and modern, cling. October and November are the most favourable months, but the visitor even during this period ought to be in good health when he goes there, and should take every precaution while there to avoid sickness. Horace tells us that in his days Rome was most pleasant at Tibur, and in these days Rome may be classed with Bombay as 'an excellent place to get away from.'

Spa.—Spa lies in the beautiful valley of the Wayal, under the Ardennes, about 17 miles from Aix-la-Chapelle. The height above the sea is about 1,000 feet, the neighbouring hills rising from 800 to 1,000 feet higher, affording in their valleys and glens many delightful excursions. The season is from the middle of May to the middle of October, during which period the climate is bracing and healthy, though a little chilly after sunset, and at times, even in the height of summer, cold from sudden gusty mountain winds.

After the middle of October, the nights and mornings are very cold. The natural position of the place facilitates drainage, the sanitary condition generally is very good, and there is consequently a remarkable absence of epidemic disease. The chalybeate or iron springs, which were known even to the Romans, attract visitors from all parts of the Continent, and from America; in fact, Spa has given a general name to all sites of mineral waters. The Spa waters are full of carbonic acid gas, which renders them very sparkling, and they also contain carbonates of iron, soda, lime, and magnesia. The water of the principal well, the 'Poulion,' has a temperature of 50° Fahr. and is most largely charged with iron and carbonic acid, being richer in this respect than the waters of most other resorts. Every accommodation in the way of baths is open to visitors, and there are numbers of amusements in the town. It is stated these waters should always be taken or used for bathing under medical direction. In the latter case, the waters being highly charged with gases, and heated by steam, the patient may fancy himself bathing in 'creaming champagne.' Peat and medicated baths are also administered, and are reported to be very beneficial in skin diseases. Both the summer climate and waters are well suited for those worn out by tropical service, for those suffering from debility arising from enlarged spleen, or from febrile affections, and for any variety of nervous exhaustion. They may be also much recommended for internal female complaints, especially if accompanied by discharges, also for young women suffering from anæmia. The climate and waters are not suited for liver disorders or dysenteric maladies, nor for plethoric subjects, nor for gouty patients, especially if subject to headache,

nor for persons with diseased lungs with tendency to spitting of blood.

St. Moritz.—St. Moritz is in the Upper Engadine of Switzerland, 5,863 feet above the sea, yet in a valley surrounded by high mountains, and close to large glaciers showing several snowy peaks. The village itself is about 150 feet above the level of the valley. The Engadine, or upper valley of the Inn, is situated to the south-east of Switzerland, and is about 57 miles in length, seldom more than a mile in breadth, and running from south-west to north-east. Even at the upper extremity it is a true valley, inasmuch as it is flanked by lofty mountains. It is, however, one of the few Alpine districts which may almost be called ugly, the high, bleak, monotonous range of pine forests, at a uniform slope, having as little of the picturesque as can well be in the mountains. Even in the great peaks there is a want of those daring and graceful forms of dome and minaret which give variety and beauty to other mountain masses. Access to St. Moritz is by the Albula and Schyn passes, and the journey requires five days from London. A traveller to the Engadine would probably proceed by train from Zurich to Ragatz and Coire, afterwards driving by the passes above named.

At St. Moritz the atmosphere, even in the height of summer, is cold and bracing, stimulating, and remarkably dry. The days are, however, very much warmer than the nights, when the temperature, even in July, may sink to 30°. There are often sudden and violent showers, and thunderstorms, but succeeded by bright cloudless weather. September is generally the least rainy month; but the unexpected changes from fair to foul, and from foul to fair, are very trying to an

invalid. The mean barometric pressure is 24 inches, or six degrees less than on the English coast. In common with certain other elevated regions in various parts of the world (the Rocky Mountains, for instance), St. Moritz and the Upper Engadine have been recently much recommended in the early stage of consumption, the diminished pressure of the air, as mentioned above, having been questionably theorised as an important medical curative factor. The locality is, however, more adapted for persons suffering from anæmia, or for those far on the road to convalescence. After a person has recovered from serious acute disease, such as fever, the Engadine may be visited and enjoyed; and the trip will probably, with ordinary care, render the healthy man even more robust. No one, however, who has suffered from rheumatism should try the experiment, and no real tropical invalid should visit these parts, except the first class mentioned at pages 80 and 81. The mineral waters of St. Moritz are at the Kurhaus, about a mile and a half from the village. They are chalybeate with soda and carbonic acid, but waters of a similar character may be obtained in a more genial climate. The season is short, from July 15 to the middle of September, and the place is expensive.

Venice.—Venice, the ‘Queen of the Adriatic,’ is built partly on piles, partly on islands, in the midst of a lagoon or marsh, two miles from the mainland of the Continent. It is divided into two unequal parts by the Canalazzo, or Grand Canal, the course of which through the city follows the shape of the letter S. It is 300 feet wide, and crossed in the middle of its track by the Ponte di Rialto, a marble structure of one spacious arch. From the Grand Canal, numerous smaller canals

pass into all parts of the city, each one being, especially at certain times, more filthy than another, as they are the receptacles of sewage and all kinds of débris from the houses which line them. The atmosphere is certainly mild and equable, but cold in the winter. The mean temperature of winter is about 39° ; of spring 54° ; of summer 73° ; and autumn 55° . In the autumn especially, drizzling rain sometimes falls for days together, and there are about six days' snowy weather every year. The air is said to be impregnated with bromine and iodine, but this may be questioned. Be this how it may, the climate is sedative, depressing, and lowering, and not fit for those who are debilitated by disease. It is perhaps suitable for the very early stage of consumption, or for those having a tendency to inflammatory attacks, or symptoms premonitory of apoplexy. But there are no excellences of climate which should induce the invalid from tropical countries to remain at Venice.

Vichy is situated at the extreme south of the department of Allier, on the right bank of the river of that name, a tributary of the Loire. Vichy is in a large open valley 780 feet above sea-level, and is surrounded by vine-clad hills, except towards the south, where it is bounded by the Allier and the rich alluvial plains beyond the river. The soil is porous, and therefore the surface quickly dries, and the air is very pure, dry, and temperate. Vichy is to a great extent protected from cold winds by the hills, and being nearly 6° of latitude south of London it is, in comparison with England, a warm climate. The difference in climate is well demonstrated by a glance at the market, where melons and peaches are exposed for sale in abundance. The town is very well built, and was immensely

improved under the rule of Napoleon III. The most important work was the reclamation of the shore of the Allier, and the embankment of the river by the side of the town. By this work what was once an uninteresting and unhealthy waste of stone and sand periodically flooded by the river, has now become a splendid promenade three-quarters of a mile in length, with pleasant walks, gay flower beds, and a variety of trees, which afford a grateful shade. Besides this river-bank garden, there is a park in the centre of the valley, which is well laid out and planted, and which is lined on either side by ranges of hotels, and at the two extremities are the 'Etablissement des Bains' and the Casino. The convalescent who visits Vichy will find that very much has been done to provide amusement, and to diminish the tedium and *ennui* often so inseparable from a long sojourn in one place. The environs of the town also afford picturesque drives, although the dust generally encountered is a drawback to such excursions.

The Vichy waters are used for both bathing in and for drinking, and there is every convenience for visitors to the baths and springs. In addition to the baths there is also a room for the inhalation of oxygen gas derived from the waters, and which is reputed to be beneficial in some forms of diabetes. The question of bathing is a simpler one at Vichy than elsewhere, since the water from many springs is mixed together in a common reservoir for the supply of the baths. It is not a question, therefore, of what spring is to be used, but merely the usual ones of frequency, duration, and temperature. The ordinary bath at Vichy is composed of half mineral water and half fresh water, has a temperature between 80° and 90°, and lasts an hour.

The selection of the proper water for drinking is, according to the authorities at Vichy, no easy matter, and 'cannot be done except by one who has familiarised himself with the effects produced by the slight shades of difference presented by the various springs.' This, however, may be doubted, for the composition of the waters of the numerous springs differs so little, that all must exert a very similar effect. Bicarbonate of soda and carbonic acid gas form the predominating ingredients, with smaller proportions of potash and magnesia. Whenever strongly alkaline waters are indicated, those of Vichy will always prove useful. The diseases most likely to be benefited are dyspeptic affections with acidity, gout and rheumatic affections, gravel, and urinary disorders generally. Obesity has also been lessened by these waters, and they have obtained a reputation for diabetes. The spring of the Grand Grille is reputed especially useful in liver disorders, and for spleen and debility after fever; but the composition of the mineral water does not indicate that it would be beneficial in the affections last named, and the tropical invalid is not advised to spend valuable time in trying to cure a liver or spleen affection by Vichy water, when there are other waters more efficacious. The climate of Vichy is, however, generally suitable for tropical invalids.

Wiesbaden is situated in Nassau on nearly level ground, yet on the southern slope of the Taunus mountain five miles N.N.W. of Mayence, and the surrounding country is charming. The mountains rise on the north and north-west, and owing to the shelter afforded by the several peaks of the Taunus the autumnal and winter climate is mild. The summer, however, is rather hot and oppressive. The promenades, springs, and

places of public resort are most shielded from the winds, the opposite or southern extremity of the locality being more open towards the plain country.

There are numerous hot springs, containing a large proportion of chloride of sodium and carbonic acid gas, with small quantities of potash, iron, lime, and magnesia. In taste the waters are thought by some to resemble weak chicken broth. All accommodation in the way of baths and for drinking the waters is found at Wiesbaden. They are valuable for chronic gout and rheumatism, for congestion of the liver with piles, for constipation, and for skin diseases. They are injurious in debility, in female affections when any local irritation exists, and in tendency to apoplexy. The season at Wiesbaden extends longer than at most other spas, the place being almost always full from June till the end of September. Tropical invalids will probably benefit during the winter at Wiesbaden to as great an extent as anywhere north of the Riviera, whether they most require a good climate or suitable mineral waters.

Wildbad.—In Wurtemberg, about thirty miles from Baden-Baden, at an elevation of some 1,320 feet above sea-level. The situation in the long, narrow, pine-scented valley of the river Enz is certainly one of romantic beauty; but from the same causes the air during the four summer months, and particularly in July and August, although pure is often oppressive, so much so that at this time the locality has been termed ‘the sweltering valley of despair.’ On the other hand, owing to elevation, the climate is very bleak from December till May. The waters have a temperature of 90° to 99°, but contain only four grains of salts in sixteen ounces, and are practically useless as an internal medicine. They are, in fact, soft waters, and make the

skin feel smooth and glossy. When hot baths and douches are needed, a six weeks' summer sojourn at Wildbad may be advisable for persons who in addition require thorough change of scene, the environs abounding in delightful walks and drives. There are pretty shaded public gardens along the river bank, and past the plantings the hills open out and the river runs through sloping meadows. A little further up, however, the hills hem the valley again at a farmhouse called the Windhof, which is the *Ultima Thule* of Wildbad pedestrians, who at the hottest season resort for fresh air to this open part. All kinds of conveniences and amusements are provided for visitors under the direction of the municipality, and fishing may be obtained in the Enz. Recently Wildbad, although not a new spa, has been more prominently brought to notice by advertisements apparently emanating from the local authorities, and persons suffering from the following complaints are said to be especially benefited by the waters, viz. chronic rheumatism and gout, paralysis of every description, especially of the spinal regions, cramps, neuralgia, anæsthesia, metal poisoning, loss of strength from over-indulgence, severe illness, or other causes; the effects of injuries, especially of gunshot wounds, injuries to the bones and joints, scrofulous rachitis, chronic dyspepsia, catarrh of the air-passages, affections of the kidneys, and diseases of women. The locality, however, is not to be recommended for tropical invalids, who may console themselves by doubting whether the waters are the universal panacea as represented.

CHAPTER IV.

HEALTH RESORTS AT HOME.

FROM the foregoing it may be observed, that whatever excellences continental climates possess, even the most favoured localities are not without grave drawbacks. It cannot be doubted that very many tropical invalids would be better circumstanced by proceeding quietly to England, and locating themselves in one or other of the places afterwards described. Similarly, there are many invalids in Great Britain who would be better in the end by remaining at home. When change of climate is recommended from England, the principal object usually is to remove patients from raw, damp, foggy weather; and when recommended from the tropics, to remove patients from heat. There is probably no more favourable climate in the world for the Angle-Saxon race than that of England in the summer of an ordinary year. If a better climate is sought in the winter, the one that approaches the nearest to the English summer is in the majority of instances the best. To youth and health the charm of foreign travel is always enticing; but when the bloom of health and youth has departed, and some of the weariness of ripeness and of failing health is felt, nothing requires more careful forethought than change of air. A person who goes to many continental so-called 'health resorts,'

ought to take health in his hand, instead of searching for health when he is there. A tired or unhealthy body and a jaded mind are not to be renovated by long excursions, exposure to sudden thermometric changes, or to unsanitary conditions so prevalent even at many of the most favoured continental health resorts. The fatigue of the journey to many continental spas, the changes of temperature experienced in the most favoured spots; the incessant noise, and absence of homely seclusion at most of the large foreign hotels; the frequent inattention to cleanliness, and, in English ideas, even to decency in some important domestic arrangements; and the defective general sanitation, are all circumstances which it is not desirable for many invalids to face. Abroad rooms are generally small, and therefore more difficult to ventilate. There is not space for fresh air entering to diffuse itself, without passing rapidly over the body and occasioning chills. In writing of the Riviera the absence of the chimney in the bedroom, and the necessity of using wood for fuel, consumed in stoves, are mentioned as drawbacks. In still more northern localities the possibility of ventilating a bedroom is even less. There is probably no fireplace, and if the casement is opened to the smallest extent, the cold air will enter the chamber, producing a change proportionate to the disparity between the external and internal atmosphere—the alternatives therefore being semi-suffocation or chill. Again, many of the continental resorts are situated in valleys, hedged round by steep mountains, or even precipices. Pfaffers, for instance, which is a great place of resort, at the foot of the Engadine, is buried in the bottom of a deep gorge, where even the mid-summer sun can shine but a few hours in the middle

of the day ; and many other places of celebrity, some of which have been described, are more or less similarly situated. Then, again, many persons would rather be in their own country and among their own country-people when ailing, than located among foreigners, speaking a different language, and having in a great degree different associations and aspirations. Lastly, continental travel and continental residence is much more expensive than it used to be, and in these days of depreciated silver, the *res angusta domi* often presses heavily on tropical invalids. Happily, however, they may with due care obtain very fair climates, suitable to their ailments, within the limits of the British Isles. Few countries indeed, within the same compass, present greater differences than are to be found between the climate of South Devon and that of the Highlands of Scotland.

Doubtless the winter abroad, if expense is no object, would often be most desirable, irrespective of climatic considerations, for there is obtained by going abroad a greater change. Though most invalids require rest from habitual wear and tear, they also need gentle, pleasant, and varied excitement, and this they find at a foreign watering place, which in various ways acts as powerfully on the nervous system, as different food and cooking, and waters, do upon their blood. This is why a British watering place, Bath for instance, does not do so much good in the same time to a certain class of patients, as Carlsbad, Homburg, or Wiesbaden. Nevertheless many places in Great Britain are really as well calculated for health resorts, as numerous fashionable localities abroad. But the inducements in the way of pleasurable excitements are far less at British than at continental resorts. Some places, as Scar-

borough for example, have, however, recently advanced in this respect.

Aberystwith is situated in North Wales, at the mouths of the Rheidol and Ystwith rivers, facing Cardigan Bay, which affords a fine sea view. The beach is semicircular and slopes gradually, being bounded by a broad road, backed by a terrace of houses some half a mile long, in the rear of which the business part of the town is found. It is protected on the north by a high hill, but it is more open towards the east, and still more in a south-easterly direction. The climate has been termed temperate and bracing, but it scarcely deserves either of these appellations. The town, and especially the terrace, which faces east and west, is exposed to the full force of the summer sun, and to strong westerly gales in the autumnal season. It is, therefore, hot in summer, gusty in autumn, and cold in winter. The rainfall is considerable, and some parts of the town lying low are damp. Owing to the pebbly nature of the beach, the bathing is not good. A principal boasted charm of Aberystwith is the magnificent sea view, but it is to many most dreary and monotonous, as ships are scarcely ever seen on the vast glaring expanse of water within the range of vision. Also the reflection from the water by day, and the noise of the breakers, especially by night, are most unpleasant, and even injurious to invalids living in the best houses, which are those in the terrace near the shore. Amusements are of a very limited character, consisting chiefly of listening to an inferior band on the pier, to sauntering about the esplanade, or to wandering on the beach in search of various stones, for which the locality is famous; a procedure usually entailing destruction of boots, wet feet, and an enduring back-ache. It would

indeed appear as if the natives did not care to attract visitors, for although the water supply is good and the general sanitary condition fair, such nuisances as clothes-drying and carpet-shaking are permitted on the beach, while rubbish, old tins, and broken bottles, are not unfrequently observed remaining for days at the extreme limit of the tide. The country around Aberystwith is attractive, presenting fine views and pretty walks; but the best prospects are denied to the visitors, who encounter in every direction the announcement, 'Trespassers will be prosecuted.' At longer distances away there are several places of interest, and in visiting which sojourners at Aberystwith seem impelled to relieve the tedium of their stay at the seaside. Among such places may be mentioned 'The Devil's Bridge,' the road to which affords some fine scenery. There is an hotel at the bridge, but visitors will probably enjoy the trip more by taking provisions picnic fashion. Aberystwith is not at all suited for the great majority of tropical invalids, but may be resorted to by the first class mentioned at pages 80 and 81.

Bath.—The situation of Bath is beautiful, and, as Macaulay observed, 'charms every eye.' It presents a most striking amphitheatrical spectacle, the city being embosomed in hills, which afford pleasant walks and a more bracing air than found in the town itself, the main part of which lies low. The climate of Bath is comparatively warm, moist, and somewhat changeable. There is, especially in the lower parts, an excess of humidity in summer and autumn as compared with places to the eastward and west, but a deficiency in winter and spring. The average fall of rain is thirty inches annually, of which nearly six inches fall in the three spring months, nearly seven in the summer, about

eight in the autumn, and nine in the winter. February, March, April, and May, are more than usually dry; November is the wettest month; and next, June and July. The average number of rainy days annually is 161. The prevailing winds are from the west and north-west, in which directions the city is well protected. No part, except Lansdown Hill, is exposed to the full force of the east winds, which in other places is intercepted by surrounding hills, yet when blowing hard, the direct east wind will rush down the sheltering but distant slope of Claverton, passing over Widcomb in its way, to envelop and annoy Bathwick first, and then the older city, placed in the hollow cup of the valley. The frequency of such wind is indeed an unfortunate meteorological feature of Bath; though in that respect Bath is not singular. The next most frequent wind is from the south-west, which generally brings rain, and to this the valley lies broadly open. The mean annual temperature is 50.5° , the highest annual mean being 52° and the lowest 49.4° , giving a range of 2.6° . The mean temperature of spring is 49° , of summer 61° , of autumn 50° , and of winter 46° . During twenty-seven months the average of any two of several daily observations never descended so low as freezing point, the lowest average temperature being 35° ; while it never reached during the summer months a higher average degree of heat than 72° . In several of the colder months, November, December, January, and February, the temperature at 3 P.M. is often 44° – 5° – 6° – 7° – 8° , and even 49° , which evidences the mildness of the climate in winter.

The water supply is good and ample, brought from springs in the neighbouring hills. But neither the sanitary condition, although satisfactory, nor the cli-

mate, although comparatively good, nor the locality, although beautiful, are the principal reasons attracting visitors to Bath. Even in the time of the Romans the Bath waters were celebrated, and the place was called 'the city of the sick man,' which appellation it might still claim from the number of persons resorting to the use of the waters. The hot wells, of which there are several, are the chief attraction, and there are four establishments for bathing, in addition to the Hot Bath and the Hetling Pump Room. The source of the springs is unknown, but the volume of water discharged daily amounts to some 180,000 gallons, and is unaffected by rainfall or drought. The Bath waters are hot and sparkling, containing carbonic acid, calcium, magnesium, potassium, sodium, a small proportion of iron, sulphuric acid, chlorine, and silica. The prices of baths are very reasonable, and every convenience and all kinds of baths are procurable at the different establishments. It is also stated that the rent of apartments and houses, even in the season, is below that of most other health resorts. There is an afternoon musical entertainment at the Grand Pump Room, which assists many invalids in pleasantly passing their time away from rain, wind, or sun, and without undue excitement, which is often injurious to the sick. There is also a good free library.

The waters are taken internally, as well as used for baths, four or five ounces being usually taken twice a day, although some persons drink much more. The waters raise the temperature of the body, increase the pulse, and excite the secretions. When taken in small quantities they have a tendency to produce constipation, but when in large doses they act as an aperient. If they agree they cause a sense of warmth in the

stomach, an increased appetite, augmented secretion of urine, and from the bowels.

The Bath waters are most useful for chronic forms of rheumatism, lumbago, and sciatica. For gout they have long been celebrated, in consequence of their action both on the stomach and kidneys. But they are more suited to the chronic form of gout, than when it is inflammatory, with tendency to relapse. Anæmia, or want of good red blood, frequently affecting females, is often removed by the use of the waters, as it frequently depends on chronic indigestion, which is one of the maladies most benefited. The waters are also very useful in removing the effects of frequent dosing with mercury, and of venereal cachexia, and for skin affections. Maladies of the spleen and affections of the liver, confirmed constipation depending on torpidity of the bowels, and piles, are usually much benefited.

Winter is not the best season for using the waters, as from variations in the weather the course may be interrupted. From the end of March to the middle of November is the preferable period for Bath. But, as before stated, the arrangements of the buildings are good, and bathing can be continued the whole year round without much danger of resulting chill. But as exercise in the open air is of great assistance in promoting recovery in many cases, it is evident that treatment of the kind should be carried out in preference, either in spring or autumn, instead of in the depth of winter or the height of the summer season. Although Bath may not be, as Landor described it, 'the only place worth living in except Florence,' it may still be regarded, both as respects climate and water, as well suited to the majority of tropical invalids, especially if a sheltered position on one of the neighbouring hills

can be procured, and if horses and vehicles are available to render locomotion easy. Comparative warmth in winter and comparative coolness in summer are thus obtainable, with the addition of mineral waters of great repute and efficacy. It is said by many who have tried both that the Bath waters are more decidedly powerful agents in the cure of disease than those of Spa and other continental bathing places; and it, therefore, seems unnecessary to go abroad for the treatment of the maladies mentioned above, when what is required in the way of climate and mineral waters can be obtained at home with less trouble and expense.

Brighton is situated in the centre of a bay stretching from Selsey Bill, in the west, to Beachy Head (which is an extension of the South Downs) in the east. The town is large, faces the south, and has a sea frontage of nearly four miles from Cliftonville, on the west, to Kemp Town on the east. The eastern end of Brighton is on the highest ground, and on the west there is a level district of arable land. The town is somewhat sheltered on the north and north-east by the South Downs, but in the spring easterly winds prevail often till nearly the end of May. The mean annual temperature is 50° , the summer maximum 84° , and the winter minimum 22° . The annual rainfall is 25 inches, and there are 160 rainy days annually. The eastern side of the town is the coldest, the western extremity being milder, but more humid, while the middle portion, about the Old Steyne, offers an intermediate climate, and also a good promenade. The beach is shingle, and therefore not well suited for children. The neighbourhood is very bare of trees, and the walks near are not particularly attractive, but the extensive downs afford some fine views and

bracing fresh air. The autumnal and early winter months are the most desirable times for invalids.

Diseases of a nervous hypochondriacal nature are usually much relieved by residence at Brighton. It is also beneficial in kidney affections and anæmic disorders. It is reputed as unsuitable for individuals of irritable or plethoric habits, for cutaneous disorders, for asthma, for inflammatory affections, and for hæmorrhoids. It is not well adapted for tropical invalids, unless in cases of simple debility from long residence in hot climates without any tendency to active disease. Brighton possesses a chalybeate spring of some power, applicable to most cases where iron waters are required, excepting when the digestion is delicate, when the iron, being in the form of sulphate, may disagree.

Bournemouth is situated in Hampshire, near the centre of Poole Bay, a gentle curvilinear sweep of coast, stretching about twelve miles from Handfast Point, on the west, to Hengisbury Head, on the east. Bournemouth is about ten miles from the western extremity of the Isle of Wight, and appears when viewed from the sea like an opening in the cliffs, on each side of which a sloping surface of white and yellow sand inclines from the top of the cliff downwards at an angle of 40° on the east and of about 50° on the west side. At the foot of the cliff is the shore covered with shingle, but between the foot of the cliff and the bed of shingle there are belts of sand which at high tide offer an excellent footing to the bather. Near and to the westward of Bournemouth, there are other openings or 'chines' in the cliffs. But to the eastward, for a distance of two miles, or as far as Boscombe Chine, the cliff is continuous and at the centre nearly one hundred feet high. The western declivity of this high

land forms the eastern cliff at the entrance of Bournemouth, which, like the one on the opposite side (not quite so high), runs inland, ascending on either side of the river Bourne, until they are massed in Holdenhurst Heath to the right, Poole Heath to the left, and Canford Heath in the centre.

This peculiarity of natural features constitutes one of the great merits of the locality as a retreat for invalids. The town lies in a valley, and on the sides and summits of the hills that form it. The valley is necessarily sheltered and warm, but the cliffs are breezy and agreeable even in the hottest weather. A feature of the town is the pleasure garden formed in the course of the river Bourne, as it runs through the valley. This garden and the town are well screened by hills and woods from the north and north-east, but there is exposure to south-westerly gales. Rain falls on about 156 days during the year; the soil is absorbent and dry immediately after rain, thus favouring exercise. The mean annual temperature is 51° , that of winter 42° , spring 49° , autumn 51° , and summer 60° . The climate is therefore mild and warm, but it is not esteemed relaxing; snow rarely lies for many hours, and the winter period is remarkable for the green appearance of the locality. The drawbacks are clouds of fine dust which rise when there is windy dry weather, especially in the spring. At this season also sea fogs and east wind sometimes prevail. The country around is chiefly moorland, but the numerous plantations of fir trees in the neighbourhood of the town have aided in giving Bournemouth a high reputation for consumption. It may be recommended especially as a winter residence for persons returned from tropical climates, whatever may be the nature of the malady, as the

climate may be varied by residence in the higher or lower parts. It is especially suited to the remains of dysenteric and bowel complaints contracted in the tropics.

Buxton is situated in the lower part of a deep valley, surrounded by steep hills and extensive tracts of moorland, the old part of the town being on a higher level than the new. For invalids requiring bracing mountain air Buxton may be recommended, for although in a valley, it has an elevation of 900 feet, and some of the neighbouring hills are 200 feet high. Like most mountain districts the climate is subject to sudden variations—summer one day, winter the next. The rainfall is also large, averaging 55 inches, and there are 213 rainy days in the year. The ground, however, dries rapidly, owing to the natural slope and absorbent soil. The winds, although frequent and often violent, are free from permanent dampness, and are therefore less mischievous than would otherwise be the case. The mean temperature is 45° , the summer maximum being 88° , and the winter minimum 10° . Buxton is principally frequented during the summer months, the autumnal, spring, and winter months being sharp and cold. The properties of the Buxton waters are those of ordinary spring waters, *plus* heat, containing a small amount of calcareous matter, chiefly carbonate of lime, and a large amount of nitrogen gas. They are clear, without taste or smell, and do not sparkle. They are principally used externally for gout, rheumatism, and old sprains. Buxton presents little inducement for a tropical invalid. After convalescence has been established, a visit in the summer would doubtless prove bracing and beneficial.

Clifton is situated on the sides and summit of a limestone hill about a mile west of Bristol, and on the banks of the river Avon, which is crossed by a suspension bridge.

The prevailing winds are south-west or westerly; then from the north-west and north-east. The number of rainy days in the year is about 169. Although the rainfall is considerable the surface quickly absorbs moisture, thus rendering the ground and atmosphere comparatively dry. The lowest recorded winter temperature is 11° below freezing point, and the highest in summer 85° . Clifton is noted for a mild winter climate, the lowest part of the town near the river being the warmest, but more humid than the upper.

There is a hot spring at Clifton containing magnesia, lime, and carbonic acid gas, but it is rarely now employed medicinally. Clifton is probably more suited for chronic dyspeptic derangements than for other disorders, but chest complaints are also benefited during the winter.

Channel Islands. — The climate of the Channel Islands collectively may be summed up as marked by humidity, which is to some extent counteracted by fresh breezes, but without any excessive heat in summer or great cold in winter, the autumn being especially lengthened and equable. But the spring is more disagreeable, and northerly winds often prevail. The climate is favourable to maladies of the chest, and many invalids from India may winter in these islands with advantage, Jersey being the preferable locality. The climate is considered beneficial for bowel and spleen affections, but unfavourable for rheumatic and liver diseases. Experience shows the islands are especially suited for old people and young children.

One great objection to the Channel Islands is the stormy weather often experienced *en route* and the lengthy passage. Invalids should select their days for leaving Southampton or Weymouth, so that they may not have to land in small boats, in consequence of a low tide. The islands are now referred to separately.

Guernsey.—This is the most westerly and exposed of the islands. Its shape is triangular, the length nine miles, and the breadth three, containing an area of about twenty-four square miles. The highest point is Hautnez, 349 feet above sea-level, and the slope of the island is towards the north, where the surface is level with a low irregular coast line; to the south the coast is more lofty, and the cliffs varied by deep gullies. The principal town is St. Peter's Port, which presents a straggling frontage of nearly a mile and a half towards the sea. The geological formation is almost entirely of granite. The mean annual temperature is $51\frac{1}{2}^{\circ}$; that of the spring months 47° , of the summer months 59° , of autumn 53° , and of the winter months 44° . The mean daily range is 8° , or about one-half that of Greenwich. This range is so small as to be almost exceptional among northern climates. The result of the observations show that in Guernsey the spring is a little warmer than in the west of England, while the summer, owing to the exposed position, is a little cooler; the autumn is prolonged and cooler, while winter as a season can scarcely be said to exist. Although the spring season is prolonged, and the summer season cooler than in England, many kinds of flowering plants are a fortnight earlier, and fruit also ripens sooner, which is probably due to the small daily range of the thermometer. As regards wind, that from the north-west-west is the most prevalent, from

which direction it blows 109 days in the year; from the north-east 107; from the south-west 100; and from the south-east 49. The north-east winds usually prevail in September, May, and March. The south-west is the rainy wind, and the average rainfall is 35 inches; October, November, December, and January, being the wettest months. There are about 164 wet days during the year, but the rain generally falls in the night, and there is rarely no part of the day which is not fine. Snow seldom falls, and still more rarely remains on the ground longer than a few hours. Hail is more frequent than snow; but the hail storms are not heavy. Hoar frost is seldom seen, except on high, exposed, bleak positions. Sea fogs are comparatively rare, but sometimes dense. During the spring and autumn there are heavy dews. From September to February there is an excess of ozone in the Guernsey atmosphere, which is not observed during the other period of the year. The drawback to the climate is humidity, but this is to some extent counteracted by the frequent winds, which insure a constant freshness, preventing the depressing effect sometimes accompanying humidity. The climate of Guernsey may be taken as a type of that of the other islands.

Jersey is almost double the size of Guernsey, being eleven miles long and five broad. The coasts are rocky, the only considerable inlet being St. Aubin's Bay on the south side, which is skirted by a sandy shore. A belt of elevated land from 250 to 300 feet above the sea ranges from east to west, rising abruptly from the north coast, but less so from the south-east and west, thus giving to the greater part of the island a southern aspect. The principal town is St. Helier's, on the south side of the island, in the bay of St. Aubin.

The temperature of Jersey in the spring, summer, and autumn is very slightly higher, and in winter slightly lower, than in Guernsey. It is also somewhat more variable, the mean range being 11° . As the slope of the island is towards the south, there is more protection from northerly winds than in Guernsey. In other respects there is no appreciable difference in the climate of the two islands.

Alderney and Sark are seldom if ever resorted to by invalids. The first is three and a half miles long by one broad, with a very rocky coast, the greatest elevation at the eastern part being 280 feet. Sark is divided into two parts by a natural causeway 300 feet high, Great Sark being about two miles long, and the extreme breadth about 3,000 yards. Little Sark is much smaller. The islands are in fact tablelands surrounded by lofty perpendicular cliffs, which are fretted by the sea into numerous detached rocks and caverns. The climate of these islands does not differ materially from that of the larger ones, so that convalescents will not suffer if induced to investigate the many natural curiosities they present.

Cheltenham is picturesquely situated on the Chelt, an insignificant stream which rises in the Cotswold Hills and flows into the Severn. Cheltenham is about eight miles east-north-east of Gloucester, and the town is sheltered to some extent from the north, east, and south-east winds by the Cleeve and Cotswold Hills, which, however, are too far away, and do not sufficiently encircle the town, to afford efficient screen. The said hills form the eastern boundary of that portion of the valley of the Severn called the Vale of Gloucester, and in some parts attain an elevation of 1,100 feet above the sea. They terminate abruptly on their western

face, and their summits present extensive undulations ; but being destitute of trees and devoid of hedges, their appearance is not prepossessing as seen about four miles distant from the town. Cheltenham covers a considerable extent of ground, and is composed for the most part of wide and airy streets, some of which are planted with trees, so that there are shady walks even in the centre of the town. To the south is a slight elevation, the first ascent of the Cotswold Hills, called Lansdown, thickly covered with houses. To the north is Marle Hill and Pittville Spa. The main body of the town lies in an extensive basin, open on the south and south-west, and is 195 feet above sea-level. The soil is several feet of fine sand and gravel, covering a substratum of blue clay, which in some places appears at the surface. The mean annual temperature of Cheltenham is $50\cdot26^{\circ}$, of spring $49\cdot65^{\circ}$, of summer $60\cdot86^{\circ}$, of autumn $50\cdot28^{\circ}$, and of winter $40\cdot92^{\circ}$. The thermometer seldom rises above 80° in summer, and rarely sinks below 21° in the winter. The rainfall amounts to 33 inches, and there are about 110 rainy days in the year. Rain is often brought by the south-west gales, which arrive from the Atlantic charged with vapour, and are intercepted by the cold summits of the neighbouring hills. The prevalent winds are westerly and southerly, but they are directly east about 17 days yearly, and from the north-east about 38 days. Owing to south-westerly winds, shelter from the east and north-east, and a large rainfall on an alluvial soil, the climate of Cheltenham, although comparatively mild and equable in the winter, is nevertheless moist and humid, and to some extent relaxing. The drainage is, however, fairly good, which tends to reduce humidity, and the roads are soon dry after rain. The water supply is pure and

good from the neighbouring limestone hills, that of local wells being more or less impregnated with mineral matter.

The mineral waters are cathartic and chalybeate, containing chiefly chloride of sodium and sulphate of soda and magnesia. The Cambray spring is strongly chalybeate, and some of the waters have been also described as containing iodine. Every accommodation is provided at the different spas, or wells, for those who use the waters. The springs have considerable reputation for relieving the diseases engendered by residence in tropical climates, especially chronic affections of the liver and spleen. But they are not desirable when there are any remains of bowel or dysenteric disorder. They are also useful in gouty and rheumatic affections, in many skin diseases, in dyspepsia, especially when accompanied by constipation or torpidity of the bowels, for the disorders of young females, and for many internal female maladies. The waters used should be decided upon with reference to the questions whether a simply aperient or an alterative medicine is required, or whether a tonic remedy is also wanted, as there are waters at Cheltenham fulfilling several indications. The season lasts from the middle of April to the beginning of October, but Cheltenham offers perhaps as agreeable and suitable a permanent residence for those long in the tropics, as any place in the midland counties. Asthmatics are often especially benefited by the climate.

Dawlish is situated in a picturesque valley, on the Devonshire coast, twelve miles from Exeter. It is much exposed to east winds, particularly in the spring, but it is protected from northerly and south-westerly breezes. The rainfall is rather large, and the atmo-

sphere humid. The summer period is often oppressively warm, but the winter very mild, the lowest January temperature rarely sinking below freezing point, at which season geraniums may be seen in full bloom. There is good sea bathing, and numerous rides and walks, and a bracing atmosphere may be obtained on the neighbouring Haldon and Halcombe Downs, from which there are magnificent views. The climate is particularly well suited for the class of tropical invalids mentioned at pages 80 and 81, who fear a colder locality, or who are not sufficiently recovered to derive benefit therefrom.

Dover is situated in a deep valley caused by an opening in the chalk hills which surround it in the form of an amphitheatre, and which, glaringly white on a sunny day, are somewhat trying to the eyes. One of these cliffs, situated to the east of the town, and rising abruptly to the height of 350 feet, is crowned by the ancient castle, and is a great protection from easterly winds to some parts of the town. Other points are similarly shielded from westerly winds. But notwithstanding this, the easterly winds which prevail during March and April are very trying. Nevertheless, Dover, it is said, is one of the healthiest towns in the kingdom, and May, June, August, and September, afford a desirable climate for those requiring a bracing air. In the winter the weather is often fine, but decidedly cold. The climate, it is said, proves especially serviceable to delicate children, to those subject to strumous complaints, for chronic bronchitis, dyspepsia, nervous debility, and congestion of the liver. But tropical invalids who have recently arrived from a hot climate will do well to avoid Dover, at least for some months, and especially if they have any tendency to either bronchial or liver affections.

Eastbourne is situated at the extremity of the Sussex South Downs, between Brighton and Hastings. It has a southern aspect, and is sheltered by Beachy Head and other cliffs. The town is kept very clean, there is a good system of drainage, a bountiful supply of pure water, good bathing, and plenty of amusements of various kinds. Several fine elm trees in the middle of the town, and trees along some of the streets, have a refreshing appearance in the hot weather. The climate may be regarded as mild, excepting when easterly winds blow. It is especially visited in the summer for the sea bathing, and is a good residence for those requiring a slightly bracing air from September till the beginning of January, but the spring is too cold. There is a chalybeate spring in the neighbourhood, which may be useful for female irregularities and for spleen affections.

Filey is on the Yorkshire coast, eight miles from Scarborough, taking its name from the Brigg, a low ridge of rocks extending some distance into the sea in the shape of a file, which when uncovered afford great opportunities for collectors of seaweed and aquarium curiosities. The town itself stands on a low cliff, and the air is bracing and invigorating, affording all the climatic advantages of its more important neighbour, Scarborough, while for the invalid there is the inducement of greater quiet and retirement. It also possesses a saline chalybeate spring.

Hastings and St. Leonards.—The old Sussex town of Hastings nestles amongst the hills, and is protected from the north and west, but it is somewhat exposed to easterly and south-westerly gales, the latter of which generally bring rain. But Hastings has extended over a mile of coast to the west until it has joined St.

Leonards, the two having become as one town with a continuous row of houses facing the sea, forming an esplanade nearly four miles long. The climate, however, is not identical, the eastern end of Hastings being the warmer, and the western of St. Leonards the more bracing. This results from St. Leonards not being so effectually protected by hills in the rear as Hastings, and being consequently more exposed to easterly winds. The soil is clay overlaid by a good thickness of sand, so that rain dries quickly. The average rainfall is 28 inches, and the number of days on which rain falls annually is 90. The mean annual temperature is 50° , that of winter being 40° , of spring 44° , of summer 60° , and of autumn 53° .

A splendid range of hills commanding fine sea views lies to the back of the town, which are being rapidly built on. On the nearer high ground above both Hastings and St. Leonards there are numerous houses, while streets run down from the adjoining slopes to the sea. Visitors may therefore have all the benefit of either mild or bracing air, the higher levels being comparatively much exposed, while the lower levels are extremely mild, the one being suited to convalescents, the other to very delicate invalids. The principal drawbacks to Hastings are that it is somewhat exposed to the east, and that there is a limited extent of sheltered ground for exercise, although the esplanade at St. Leonards is one of the finest in Europe; but the piers and a large room at the end compensate to a certain extent for this deficiency. Hastings can be recommended as affording a healthy climate during eight months of the year, residence in the autumnal season being less desirable than at other times, when the atmosphere often feels close and oppressive. The

locality is suited to cases of dyspepsia with debility, for neuralgia and rheumatism, for gout, scrofula, and chronic chest complaints. For the latter the lower part of the town, being warmest, is best; but if near the sea, the noise of the waves is objectionable to some people. As a proof of the mild winter climate, it is stated that the percentage of consumptive patients benefited by the Hastings climate is forty-four, against fifty-five at Pau, and fifty-eight at the Riviera towns, while the percentage of those returning worse is almost as low as the quotation for the Riviera resorts. Hastings is a favourite place for children, and it may be broadly stated that tropical invalids, suffering from almost any malady, will be benefited by the climate.

Harrogate consists of two parts, known as High and Low Harrogate. High Harrogate is about 600 feet above the sea, and is therefore less sheltered and colder than the lower town, but at the same time dryer. The soil is sandy, on light porous sandstone, which absorbs all moisture with great rapidity, so that a few minutes after heavy showers one may walk on dry ground. The rainfall is considerable, about thirty inches, and there are 118 rainy days annually, while it is seldom that the sky is perfectly free from clouds. The extensive heaths, which with large tracks of finely cultivated country surround Harrogate, allow full play to the southerly breezes, and render the air remarkably pure and bracing, and the elasticity of the atmosphere is felt by every new comer immediately on arrival.

There are numerous mineral wells, and the waters are of several varieties, sulphurous, saline, aperient saline, and two slightly chalybeate wells. All the springs are cold, and the waters are usually warmed

before being taken. The maladies principally benefited are dyspepsia and torpidity of the liver arising from sedentary employment or too good living, habitual constipation with piles, skin diseases, scrofulous affections, chronic gout and rheumatic complaints, and maladies of the urinary organs attended with deposition of gravel. Harrogate is not well suited for the tropical invalid on first arrival in England; but a second summer, from June to October inclusive, may be spent with great advantage.

Ilfracombe.—Ilfracombe may be regarded as a representative climate of this part of the north coast of Devonshire. It is surrounded on three sides by the sea, and the climate is essentially oceanic. The geological characteristics are slate and quartz, so that rain dries up or runs off quickly, not soaking into the ground and producing damp. On the land side it is protected by heights, commonly called ‘torrs,’ the most important of which, ‘the Capstone,’ shelters it from the north wind. This height is conical in form, and has a promenade scooped out on its face, which is one of the great features of the place. Ilfracombe, besides being so freely exposed to the sea breeze from the Bristol Channel, presents all the advantages derived from that peculiar equability of temperature common to the greater part of Devonshire. While the summer is cool, the winter is warm. The heat of the former season is modified by the cool breezes from the Atlantic, and the winter temperature is lessened by the shelter afforded by the neighbouring heights. Snow comparatively seldom falls, winter mists are rare, frosts are scarcely ever severe, and myrtles, verbenas, fuchsias and ixias, flourish all the year round, with wild strawberries in January, thus showing the mildness of the winter climate.

The disadvantage of Ilfracombe is a poor beach, the shore being rocky and not admitting of bathing except at certain hours. Another objection in the case of some invalids would be the breezy nature of the locality, from its being so open to the sea. This, notwithstanding the equable temperature, renders Ilfracombe more bracing than either Torquay or Dawlish. It may therefore be recommended for tropical invalids who require a more bracing air but still a mild equable climate, after a few months spent at either of the above-mentioned places or at Sidmouth. Ilfracombe is especially beneficial in all cases of general debility, nervousness, affections of the kidney, and for dysenteric conditions.

Ireland.—The temperature of Ireland is more equable than that of England or Scotland, the winters being less severe, and the summers not so warm. This difference is most noticeable on the west and southern coasts, where the effects of the Gulf Stream are more felt. The mean annual temperature of the country is stated at from 49° to 50°. The winds are chiefly from the west and south-west, bringing a copious supply of rain. The average fall is greater than in England, being computed at 36 inches. The rainfall is not violent, but frequent and persistent. The climate is therefore damp, and offers few inducements to the invalid from the tropics, although very great inducements to the tourist in good health. Probably Queenstown and Kingstown are the only places where a tropical invalid should stay.

Queenstown is situated on Cove Island, Cork Harbour. It is sheltered from northerly winds, and exposed to the full influence of the sun. The mean temperature for the year is 51°, winter 44°, spring 50°, summer 61,° and autumn 52°. The rainfall is 35 inches

yearly, and there are about 131 wet days. Queenstown is cool in summer, yet affording a tonic sea atmosphere. The winter climate is very mild and equable, and not so humid as many places near the sea. The houses being at different elevations, a residence suitable to the malady may be easily chosen. There are few days, during the winter months, when an invalid would be unable to take exercise. Throat and chest, consumptive, dyspeptic, scrofulous, rheumatic, skin affections, and hooping cough, are nearly always benefited. It is well suited for delicate children, and internal female disorders are nearly always benefited. Most tropical invalids may pass their first winter at Queenstown with advantage, the climate being well suited for both bowel and liver complaints. In the summer time there is excellent sea bathing.

Kingstown.—Situated about eight miles south of Dublin. The air is sharp and bracing, and the climate not so suitable for tropical invalids as Queenstown; but next to Queenstown, it is probably the best locality in Ireland for these classes.

Leamington.—The climate of Leamington, in Warwickshire, is comparatively cold and humid, as there are no protecting heights in the locality, the country around being flat, and the town itself lying low, on the Leam.

There are various mineral springs, and every convenience for those using the waters. The 'old well' is one of the favourites, containing sulphate of soda, chlorides of sodium and magnesium. The temperature of the waters is about 48° Fahr., and the action is aperient and alterative. The waters are suitable for the same class of maladies as those of Cheltenham, but being more powerful they agree better with individuals

of a torpid habit than with those of an irritable temperament. Of the two localities, Cheltenham, from its less exposed position, is more suited to tropical invalids than Leamington. Those who have suffered from 'liver' or from dyspepsia accompanied by depression and nervousness, will do well by avoiding Leamington altogether.

Llandudno, Caernarvonshire.—The town is situated on a neck of land terminated at the end and north-west by the Great Orme's Head, a high mass of limestone rock, which rises abruptly from the sea to a height of three hundred feet. On the south and east the locality is bounded by another mountain ridge known as the Little Orme. The Great Orme forms an effectual screen against north-west winds, while the Little Orme and contiguous hills shelter the town from south-easterly gales. Llandudno, situated between the two heads, is open on both sides to the sea, the front facing Llandudno or Orme's Bay to the north, while to the south and west there is Conway Bay. The first-mentioned bay extends in a semicircular shape from the Great to the Little Orme, forming an arc upwards of two miles in extent, and on which the best houses are situated. Between the parade in front of the terraces and the beach, a sea wall has been built and a promenade formed, where the invalid is well sheltered when taking exercise. There is also a good beach with firm sands, free from dangerous currents, and with such a slope as to allow of bathing at almost any state of the tide. There is a good road, five miles long, all round the Great Orme's Head, from which fine sea views are obtained in one direction, while in another the distant Welsh mountains are visible. The beauty of the site of Llandudno itself is also considerable, sea and mountain combining in picturesque scenery.

As regards climate, the summer season is cool and bracing, while the winter is comparatively mild, as proved by numbers of delicate flowers, as myrtles, fuchsias, and calceolarias, which flourish out of doors during the winter. The mean temperature is 50° , the maximum 86° , and the minimum 22° . The rainfall is 36 inches, and rain falls on 170 days during the year. Fresh but tempered breezes, freedom from fogs, a bright dry atmosphere which is never relaxing, render Llundudno well adapted for all tropical invalids who require a tonic, bracing climate, and who have commenced their sojourn at home in some more southern locality; but it is not well suited for persons recently arrived from a prolonged stay in hot climates except in the height of summer. The maladies most benefited are bowel complaints, and debility following fever and other acute diseases. In winter, the houses standing near or on the slope of the Great Orme afford the warmest and most sheltered positions.

London.—Although London is not usually enumerated among 'health resorts,' some parts of even the four-mile radius, and more of the suburbs, may almost be classed as sanatoria for particular cases. The mean annual temperature is 50° , that of the three winter months (December, January, and February) 41° , of the three spring months 49° , of the three summer months 63° , of the autumnal months 50° . The highest summer temperature recorded in the shade during seventeen years was 94° , and the lowest winter temperature 4.5° . The daily range of temperature is considerable, giving an average of 56° for each day of the year, the greatest range occurring in April and May, and the lowest in November and December. The mean dew point is 44.31° , and the range from 79° to 0° . The

mean pressure of the barometer is $29\cdot931^{\circ}$, and the range $2\cdot259^{\circ}$. The most prevalent winds are south-west, which occur 77·8 days during the year; then west, 64·8 days; then south, 55·8 days; north-east, 46·2 days; east, 36·4 days; north, 23·4 days; and south-east, 20·6 days. The rainfall averages 21 inches, and the number of days on which snow or rain falls is 178 annually. Excepting certain sheltered places on the coasts, all observations tend to show that London is usually warmer, especially at night, and in the winter, than in the country, and the temperature is generally more equable. This may be accounted for by the copious and varied reflection of heat from the pavements, buildings, &c., and from the number of fires burning. On the other hand, the atmosphere cannot be so pure, as a murky London fog, which retains and therefore renders the impurities more evident, is sufficient to demonstrate. Nevertheless London suits many delicate invalids, and some asthmatics are often better in town, even during the winter, than in the country.

There are numerous spots in the immediate neighbourhood of London which are peculiarly healthy and bracing. These are generally the more elevated sites, as Richmond Hill, Highgate, Hampstead, and the higher parts of Croydon. The Surrey hills enjoy a still purer and more invigorating air, and with the other localities named are well suited for those whose nervous systems have become debilitated either by the enervating influence of tropical heat or by malarious fever. On the other hand, the lower parts of the environs of London, as the valley of the Thames, Putney, Barnes, Kew, Petersham, the lower parts of Richmond and Twickenham, from the warmer nature of the climate, are better suited for those who have been

sufferers from hepatic and dysenteric affections. As a residence for the convalescent, the district from Hyde Park Corner in a north-westerly direction—including what is often called Asia Minor, from the number of Anglo-Indians living there—presents probably the best sites. It affords considerable elevation, as compared with most of London, a generally gravelly soil, houses of modern construction, good drainage, open and airy streets, and few back slums.

Malvern.—The Malvern hills are composed of trap-pean rocks, the constituents being sienite, quartz, felspar, mica, hornblende, and greenstone, with here and there veins of limestone. On the eastern flank they rest on red sandstone, on the west on limestone. The hills are about nine miles long, and form a narrow chain, dividing Worcestershire from Herefordshire, their direction being from north to south. The summit presents an undulating appearance, rising in many places into peaks, forming a picturesque and mountainous outline. The elevation is from 900 to 1,450 feet above the sea; the highest point being the Worcestershire Beacon, above the town of Great Malvern. The northern extremity of the chain is about eight miles S.W. of Worcester, and the southern about nine miles N.E. of Gloucester. The towns of Malvern are situated on the eastern declivity of the hills. Great Malvern stands at the bottom of a valley or recess, which separates North Hill from the Worcestershire Beacon to the south. The valley is one of several which, ravine-like, run down the eastern face of the mountain. The hills above the town are intersected by walks or pathways of easy ascent; and in front of the position, but at a lower level, is the locality called Malvern Link. Little Malvern is in another

valley under the Herefordshire Beacon, one of the highest parts of the summit. Although, like Great Malvern, it fronts the east, it is better sheltered from north and north-west gales. The towns of Malvern therefore, although in valleys, are not on the plains, but stand at an elevation of about 340 feet, upon the eastern declivity of the hills which rise abruptly from the level land stretching to the Severn, running about four miles from the foot of the hills. Malvern Wells is some two miles from Great Malvern, and between the two. Its situation is not quite so elevated, nor are the contiguous hills quite so high, but its local peculiarities are the same. The landscape, as seen from the various points of the town and hills, is one of extreme beauty and extent. Towards the east are the fertile plains of Worcestershire, studded with villages and towns stretching from Worcester on the left to Tewkesbury on the right, with the Severn winding in the centre, and Breedon hills limiting the view twenty miles away to the south-east; the whole forming a panorama the diversified magnificence of which can scarcely be exceeded. Towards the west, looking into Herefordshire, are seen hills of various forms and sizes covered with wood, and extending for some miles, the horizon being bounded by the distant mountains of Shropshire and Wales. The mean annual temperature at Malvern is $49\cdot6^{\circ}$ —that of spring being 47° , of summer $59\cdot8^{\circ}$, of autumn 49° , of winter 41° . It thus appears that the principal difference between the temperature of Malvern and London is in the coolness of the spring and autumn; at the former place, the winter temperature does not so much differ from that of less elevated localities, and this arises from two principal causes. *First*, from the absence of fogs, Malvern lying too high to be affected

in any material degree by the subsidence of the cold, damp air, which results from the cooling of the earth by radiation at night; and very frequently a dense fog may be seen overspreading the vale below, while the town is quite clear and enjoying the rays of the sun. At such times the thermometer at night falls several degrees lower in the plains than at Malvern, particularly if the atmosphere is calm. Again, the fogs or clouds which collect at times on the mountain top descend comparatively seldom so low as Malvern; and when so enveloping Malvern, they are warmer than terrestrial fogs. The houses of Malvern lie between those fogs which result from the cold of radiation, and those descending from above, and are consequently comparatively little affected by either. *Secondly*, owing to the eastern aspect, the elevation, and the absence of fog, Malvern receives the first rays of the morning sun, which, especially in the cold months, often rises with great splendour, shines brightly for a time, but is afterwards obscured by clouds, perhaps even before it has time to dissipate the night mists which form on the lowlands. The rainfall averages 34 inches, and there are about 131 rainy days in the year. The air is always pure and invigorating, and is well adapted for bracing the system of the jaded and overworked, and of the convalescent from any debilitating disorder, also for young females suffering from anæmia. It is, however, essentially a summer resort, as owing to the position the strong winds of winter and spring are severely felt, and this must ever disqualify Malvern as a winter residence for the great majority of invalids. The east winds are not, however, felt quite so much as would be supposed; for the narrow line of hills acts somewhat as a dam in a current of water would do,

preventing motion below while allowing the stream to rush over the top. Hence, when an easterly wind blows with force over the crest of the range, there is considerably less force of wind felt below. Westerly winds are, however, sometimes very troublesome, coming over the tops of the hills with great force, and descending in violent gusts and eddies. July, August, and September, may be spent with the greatest advantage at the Malvern Hills. Afterwards, the prevalence of winds, and the early afternoon disappearance of the sun behind the hills as it sets in the winter, render the locality cold and gloomy. But to breathe pure air and to drink pure water for some months at the most favoured time of the year, and at the same time to enjoy extended magnificent scenery, are circumstances in themselves sufficient to promote recovery from many maladies, particularly those originating in indigestion. Yet, although there are few more pleasant and healthy spots in the summer and autumn, Malvern is not well suited for the majority of tropical invalids during their first summer at home, and a visit there should be deferred until the second season.

There are several mineral springs in the neighbourhood, the principal being St. Anne's and the Holy Well, but the medicinal properties are unimportant, the waters containing only a very small quantity of lime and soda. They nevertheless have a great reputation for the cure of scrofulous affections, for eye diseases, and in disorders of the urinary organs—especially among that numerous class of people who place greater confidence in miraculous medicinal agency than in hygienic conditions. At Great Malvern there is also a weak chalybeate spring, which acts as a mild tonic, and may prove a useful auxiliary in the complaints of young

females, and in debility, and spleen enlargement, following malarious fever.

Margate is directly open to the north and north-east, so that a vessel steering north-half-east would not reach land before arriving off the coast of Greenland. Thus the wind from that direction may travel over 1,380 miles of sea. Further, in consequence of Margate being situated on a promontory, three winds out of four pass over the sea before reaching the town. The white chalk soil and thin vegetable mould with which it is covered allow water to pass away rapidly. The dryness which results is also augmented by the comparative scarcity of rain, as there are neither mountains nor trees to attract the clouds, which often obscure the sky but pass off inland. Thus the climate may be recommended, especially from May to September inclusive, as affording a dry, tonic, bracing, invigorating and extremely pure atmosphere. There is a long stone pier, on which exercise may be taken in fresh sea air, and there are long stretches of flat sand and good sea bathing. The drawbacks are a prevalence of bleak northerly and easterly winds during the winter and spring months; the low position of some parts of the town, which are scarcely at sea-level; a bad system of sewerage, as one of the main sewers (King Street) is liable to have its contents washed back by sea water at high tide; the number of cesspools in the town; contamination of water supply from cesspools and obstructed sewers: pollution of the sea about the bathing sands from the above-mentioned sewer, the locality of which should be avoided; and the periodical visitation of large numbers of excursionists, who may introduce epidemic disease. With due care to avoid the evils arising from the above, Margate will be found well

suited to those returned from tropical climates, after some months' residence in a less bracing locality. The climate is particularly well adapted for weakly children, especially if affected with any form of scrofula.

Matlock.—The village of Matlock, Derbyshire, is in Matlock Dale, which extends for two miles north and south, and is bounded on each side by steep rocks rising to the height of about 300 feet. The river Derwent flows through the Dale, and its banks are lined with trees except where the rocks rise perpendicularly from the water. Of these the High Tor is the most remarkable, being 396 feet high, and consisting of a mass of dark rock frowning over the northerly entrance of the valley, its base being laved by the waters of the Derwent. Nearly opposite to it, on the right of the river, is Masson, a rock of greater elevation than the Tor, but inferior to it as a picturesque object. The village or hamlet is at the bottom of the gorge, following the crescent-like sweep of the river. The road is cut on the right bank of the river, and the Dale opens out towards the south, where Matlock Bath is situated. Here the buildings are grouped in a singular manner on the mountain sides, some close to the river, others on wooded hillocks, or perched on naked heights of calcareous stone, which however is relieved by the dark green foliage of mountain trees.

The waters at Matlock Bath are tepid, but have no decided medicinal properties. The climate of the valley is warm in winter and cool in summer, but it is subject to sudden changes caused by winds rushing through the gorge. It is not particularly well suited to tropical invalids, except when far advanced towards convalescence, when a period may be spent at Matlock with great advantage, the walks in the neighbourhood

being very delightful, and the summits of the heights affording bracing air and most attractive views over a large extent of country. The geologist and mineralogist may here enjoy advantages which few other localities afford. There are also numerous places of interest within the limits of a day's excursion, among which Haddon Hall, Chatsworth, and Dove Dale may be mentioned.

Penzance is situated in Mount's Bay, ten miles from the Land's End. The position of the town is picturesque, as it slopes down from an elevation of about 200 feet to the edge of the sea, where it terminates in a promontory about three-quarters of a mile long, with a fine expansion of the bay before it. It has an easterly aspect, but is slightly protected from westerly gales, but from these only. The mean annual temperature is 51° , that of winter 44° , of spring 49° , of summer 60° , and of autumn 53° . The maximum summer temperature is 84° , and the minimum winter temperature 19° . The mean daily variation is 2.6° , and the extreme variation 10° . The rainfall is large, 44 inches annually, or almost twice as much as London, and there are about 179 rainy days. But the rain is seldom heavy or excessive, although frequent, and there is rarely a day so thoroughly wet but that there is some intermission, nor so cloudy that the sun does not sometime shine. As regards winds, those from all the southern points are to those from all the northern in the proportion of three to two, and those from the western bear almost a similar proportion to those from the east. Of direct easterly windy days there are only 37 during the year. The climate may therefore be regarded as warm, moist, mild, and relaxing, yet especially as a winter climate possessing the twofold advantage of

warmth and steadiness of temperature, both by day and night. During the prevalence of the south or south-west winds, so frequent in winter, there is very little difference of temperature in the twenty-four hours, the sky is often clear, and the softness of the air so delightful, that with myrtles and other exotic plants common in the open air, the visitor is almost tempted to forget he is in a British winter, especially as frost and snow are during some seasons totally unknown, and are never severe. The disadvantages are exposure to sudden storms of wind and rain, and a humid atmosphere, dependent on the constantly recurring rainfall brought by the prevalence of southerly winds. The late and comparatively cold springs are also unfavourable. It is a peculiarity of the climate of the whole of Cornwall, that the spring is less warm than at other places, as compared with the difference between the other seasons, the variation being in fact very little at this time between Penzance and London. Penzance should therefore be avoided in the spring, as there is no advantage to be gained there. At all times the climate is best suited for aged invalids with chronic bronchial affections and scanty expectoration. It is not well suited for tropical invalids at any time, being too relaxing.

Ramsgate.—It is only of late years that this place has attracted any special attention as a winter resort, although long noted as a summer residence. Ramsgate is situated on the south-east coast, on the southern part of the Isle of Thanet. It stands directly on the chalk, the greater part of the town lying between two cliffs, while the principal residences are on the elevations known as the east and west cliffs. The town faces nearly south-east, but there are localities having a

south or south-west aspect. The suburb of St. Lawrence is immediately adjacent, and may be said to form an outer zone. The fall of rain is about 25 inches annually, and there are 141 rainy days in the year. The mean temperature is 50° , the mean range 10° , the extreme summer maximum 85° , and the winter minimum 23° . Both the meteorological observations and the sheltered position indicate that Ramsgate possesses a somewhat similar climate to that of Hastings, but more dry and bracing, and being warm but not relaxing. Until latterly, little was done for the comfort or attraction of visitors; but now a marina, placed under the cliffs near the sands, which are very extensive, affords protection from the land winds, while admitting an atmosphere direct from the ocean. The summits of the cliffs are breezy places for those who can take exercise in a bracing air. The climate is well suited for weakly children, or if affected with any form of scrofula, also for those returned from tropical climates after some months' residence in a less bracing locality. The drawbacks to Ramsgate are: an inadequate although pure water supply; indifferent sewerage, that of the east part being the best; contamination of the sea water by sewage, which interferes with the pleasure of bathing on excellent sands; and the large number of day excursionists from London or elsewhere, who not unfrequently introduce epidemic maladies.

Scarborough.—The older portion of the town is delightfully located in the recesses or slopes of a Yorkshire bay which has been compared to that of Naples, and viewed from the cliffs to the south it has a most picturesque appearance. The newer part of the town stretches along the shores to the summits of the north and south cliffs, and is thus divided into two

portions. The latter is the most fashionable part, and on this side are the Spa gardens and promenade, 600 feet in length with a rotunda at each end. There is also a tramway both north and south from the sands to the top of the cliffs. On the top of the cliff above the Spa gardens extends another handsome promenade, from which a magnificent view is obtainable. The sands are very good for bathing, but somewhat limited in extent. The walks and drives around the neighbourhood are many and varied, and amusement of all kinds abound, Scarborough having been more 'developed' than perhaps any watering place in the kingdom.

The climate is less variable than that of many other places, the summer being comparatively cool, and the winter comparatively warm. It is a mistake to suppose Scarborough to be a very cold place in the winter, as much of the locality is sheltered from the north and east, but open to the whole day's winter sun, which characteristics render the winters mild. The mean annual temperature is as high as 51°. The rainfall is 28 inches, and there are about 123 rainy days in the year. The two most trying months are generally March and April, but at all times the air is comparatively dry and bracing. The atmosphere of the summer and autumnal seasons especially, from June to October inclusive, is particularly cool, pure, and bracing.

Scarborough also affords the advantage of mineral springs, of which there are two on the Spa, one chalybeate, the other saline, so that sea bathing and a course of mineral waters may be taken at the same time, and are recommended for some few ailments, especially the chalybeate for anæmic girls, and the saline for habitual

constipation, for torpidity of the liver, and for some skin diseases. Scarborough is very suitable for nervous and hypochondriacal patients, for those who have been overworked, and for convalescents requiring a bracing air during the summer. It is not very suitable for tropical invalids on first arrival in England, although a second summer may be spent at Scarborough by most Anglo-Indians with every probability of attaining to full vigour.

Scotland.—The climate of Scotland generally is extremely variable, but owing to its seaward exposure, neither the cold in winter nor the heat in summer is so intense as in similar latitudes on the Continent. The average mean temperature is about 47° , the highest mean for any month being in August and standing at 58° . The maximum temperature of summer is 87° . The prevailing winds are westerly, blowing near two-thirds of the year from either the south-west or north-west. In spring and early summer easterly winds prevail. The atmosphere is moist, nearly 100 inches of rain falling in the mountainous districts, where mists and fogs are proverbially frequent.

Edinburgh partakes in a general way of the climate of the whole of Scotland; but the elevated position of the city renders it exposed to violent winds from all quarters, so that the atmosphere is neither genial nor mild. But the position secures at least a sea air free from impurities, and hence Edinburgh is a salubrious place of residence for persons in good health, or who, not positively diseased, require a bracing air. It is also especially healthy for growing boys needing a bracing climate. For malarious cachexia, unattended with any inflammatory condition or tenderness of the spleen, it may also be recommended.

There are numerous mineral springs in various parts of Scotland, but those most appreciated are the saline springs at the Bridge of Allan near Stirling, and the sulphurous springs at Moffat in Dumfriesshire. The first of these places is resorted to principally during the spring, as the position is agreeable and comparatively warm; and the latter during summer and autumn on account of its more bracing air. These waters are cold and more suited for drinking than baths, but are really of little medicinal value.

Sidmouth is on the south-west coast of Devon, at the mouth of the Sid. It occupies the gorge of a valley between Salcombe Hill on the east, and Peak Hill on the west. These hills rise to a height of 500 feet above the sea, and nearly inclose the town, except to the south, which lies open to the beautiful bay of the English Channel, extending from the Bill of Portland on the east to Bury Head on the west. The soil is diluvial deposit of gravel overlying red sandstone, which quickly dries, and there is a good esplanade for exercise. The rainfall averages 27 inches, being less than at most places on the coast, and the number of days on which rain falls annually is 141. The annual mean temperature is 51° , that of winter 40° , of spring 50° , of summer 63° , of autumn 53° . The climate may be described as mild, equable, moist, and in the summer and early autumn relaxing. January is the coldest month, when frost and snow may occur. February is usually bright, but sometimes stormy. March presents north-easterly winds, but is rarely tempestuous. April is showery. During the summer months south-westerly winds prevail, and there are sometimes sudden storms. The late autumn is the best and most unobjectionable season, being cooler than inland. Winter

manifests little of its natural rigour in this sheltered situation. Although winds prevail at this season, they usually come from the south-west, and frequently bring with them an elevation of temperature. The months of November and December are often fine and spring-like. The mildness of the climate is indicated by the flowers and flowering shrubs, the myrtle especially attaining a great size, with primroses in January and wild strawberry blossoms by the middle of February. Orange and lemon trees also grow out of doors. There is good sea bathing ; and from the absence of any large river, the sea at Sidmouth has a remarkable saltness. The town is kept clean, and the water supply is good and abundant. The locality offers an agreeable residence to persons who have lived long in hot latitudes, and it is well adapted for affections of the liver and spleen, and during autumn and winter for chest complaints, but during summer it may prove too relaxing. Many of the residences are well placed, with extensive views of the sea and scenery around.

Southport is situated between the Mersey and the Ribble, about sixteen miles from Liverpool. The atmosphere is pure, the air dry, fogs comparatively rare, but the temperature is variable. The climate is, however, generally bracing, except in June and July, when it is hot and somewhat relaxing. The late spring and the early autumnal months are the most enjoyable periods. The shore is sandy and the bathing good, there are beautiful winter gardens, a pier three-quarters of a mile long with a tramway on it, and usually plenty of amusements. Southport is best suited to dyspeptic complaints, and for nervous depression consequent on long illness or on overwork.

Tenby is located on a rocky site on the Pembroke-

shire shore, South Wales, facing Caermarthen Bay. The summer season is warm, but the winter climate is remarkably mild and equable, offering a suitable atmosphere for invalids with delicate chests, or who from other causes are unable to bear a more bracing air. It is stated that there are not many days during the winter months when an invalid would be unable to take exercise, and the scenery of the surrounding country is attractive and beautiful. The sands are extensive and smooth, particularly on the south, but there are many rocky patches to the north. Tenby is better suited for Anglo-Indians than any other of the Welsh watering places.

Torquay, called the 'Queen of the South,' is snugly and charmingly situated in one of those deeply indented bays that stud the coast of Devonshire. It is really a bay within a bay, or rather a cove in the north-west angle of the large circle of shore known as Torbay.

This cove is surrounded by three hills, from 180 to 200 feet high, and similar in general features. Viewed from the sea Torquay appears to be surrounded by a crescent-shaped screen of hills, but between them run two tortuous valleys, one towards the east, the other towards the north. In front are the Braddon hills, between which and the hills on either side the above-mentioned valleys diverge. The greater part of the town lies along the shores of the cove or harbour, but there are also houses along the slopes of the hills at different elevations, and with varying aspects, and also in the gorges of the valleys. The town faces the south-west, and is generally sheltered from the north and east. It presents the appearance of a number of rising terraces, some of which, receiving the direct rays of the sun unchilled by the colder winds, form safe and

pleasant walks for invalids. The scenery from these terraces is peculiarly beautiful; immediately beneath is expanded the bay like a small inland sea on every side bounded to the view by wooded heights. The mean annual temperature is 52° , higher than any other British station except Scilly. The temperature of the three spring months is 50° , of the summer 61.26° , of the autumn 53.1° , and of the winter 44° . The extreme *minimum* temperature registered in the winter is 21° , but the thermometer seldom sinks so low, and the changes of temperature between the day and the night are not nearly so extreme as at many other places. The annual rainfall is 35 inches, and the number of days on which rain falls during the year is 175. Notwithstanding this the air is remarkably dry, arising from a greater freedom from fog than is common to the Devonshire climate. Torquay may therefore be regarded as sedative and relaxing, especially near the sea; but the air on the hills towards Babbicombe is more bracing, the climate varying much according to situation and altitude. It is one of the few places where the month of March may be passed by an invalid with pleasure and safety, many situations being completely sheltered from the east wind. The place is therefore well suited for consumptive patients, also for rheumatism, gout, and intestinal complaints. For tropical invalids fearing a colder climate Torquay is well adapted, and the fact that the climate may be varied is much in its favour. Those who have been resident some time, and are stronger, or those with whom immediate proximity to the sea may not agree, can remove from the lower parts to the southern face of one of the hills, while by a little climbing the bracing hill atmosphere is obtainable. There is a winter

garden and an aquarium, but the absence of a good sea beach is a drawback.

Tunbridge Wells.—The grand features of the locality are an irregular amphitheatre of beautifully undulating hills. The scenery is therefore varied, and there are enjoyable walks and drives. The soil quickly absorbs rain, so that the roads soon dry, and the air is therefore comparatively dry, genial, and bracing.

Tunbridge has been long famed for its mineral water, which contains a small proportion of iron with carbonic acid gas, and has a temperature of 50° Fahr. Both the climate and waters are suited especially for cases of debility or anæmia, and for females who have fallen into an irregular state of health. Dyspepsia and general lassitude resulting from too sedentary occupation or overwork are also benefited. There are, however, no special climatic excellences to induce invalids from the tropics to resort to Tunbridge Wells, but the waters may be taken with advantage when any affection of the spleen remains as the effects of malarious fever.

Weymouth and Melcombe Regis are situated on the south coast of Dorsetshire, at the mouth of the Wey, Weymouth being the nearest port to Guernsey. The town forms a semicircle round the margin of a deep wide bay more than a mile in length, with a broad esplanade between the houses and the beach. Owing to an estuary called the Breakwater running to the back, and leaving only a narrow stretch of land, the depth of the town is shallow. The coast line to the east is extensive, reaching to St. Alban's Head; on the west it is closely bounded by Portland, the pier and breakwater being on this side. There are firm sands and public gardens. The climate is very mild on the

bay, but more bracing on the higher ground. The locality may be recommended for both summer and winter residence, the temperature being very equable, cool in summer and warm in winter. It is suitable for the same class of cases as the Devonshire watering places.

Whitby.—The town is principally located between two cliffs, and consists of an old and new part. The former lies on the east bank of the Esk, and stretches somewhat precipitously up the cliff, so that some of the streets are very steep. On the other side of the river, which is crossed by a bridge, there is a moderate extent of flat ground, on which part of the new town is built. To the rear the houses extend up the cliff, the road to some of the residences being too steep for carriages. There are two piers, one on each side of the mouth of the river, and to the west there is a stretch of level sands, affording good bathing. Whitby gives a pure and bracing air, while the surrounding country presents beautiful rides and walks, over hills, dales, and moorland. It also has a chalybeate spring. It is suitable for the same class of cases as Scarborough, and for real invalids is probably the best, although not affording so many attractions for convalescents or pleasure seekers.

Isle of Wight.—THE UNDERCLIFF AND VENTNOR.—The Undercliff is the name given to that part of the island extending on the south-east coast from the village of Bonchurch to Black Gang Chine, a distance of six miles. The Undercliff has been formed by a succession of land slips, one of which took place near Bonchurch so lately as 1881. The result of the greater land slips of former times is a huge perpendicular barrier of rock sheltering a ledge or elevated plateau—

which has slipped down from above—from all the force of the north, and a great part of east winds, which prevail in winter. The Undercliff is in fact a natural terrace, backed by a mountainous wall on the north, but open on the south to the influence of the sun. This mountainous wall or range is from four to six or seven hundred feet high, the two extremities rising still more; St. Boniface, on the east, being eight hundred feet, and St. Catherine's hill, on the west, nine hundred feet above sea-level. The protection afforded by this mountain barrier is greatly increased by the abruptness of its southern aspect, which presents in some places bare perpendicular sandstone; in others, chalk covered with fine turf and underwood. The width of the ledge or terrace thus sheltered varies from a quarter to half a mile, and is from fifty to sixty feet above the beach, to which there is access in some places by a sloping surface, while in other localities there are rocks. The Undercliff is chiefly composed of limestone rocks, resting on blue marl, while the downs, which stretch inland from the summit of the cliffs, consist of chalk and sandstone. The ground therefore is of such a nature as to give immediate passage to the rain, thus permitting walking exercise very soon after a heavy downpour. The rainfall is twenty-three inches, less than nearer the centre of the island, and sea fogs are comparatively rare. Another of the valuable climatic peculiarities of the Undercliff is that the slight fall of temperature which occurs at sunset is succeeded by a marked rise, which continues during the night. In another important point also the Undercliff appears to excel most other parts of the British coast. This is in the dryness of the air, depending on the small rainfall, on the absorbent nature of the soil, which does not permit

much evaporation from the surface, and on the large amount of sunshine; the consequence of clouds and fogs reaching the coast at a great height, and only descending as they approach the lofty ridge of downs which shelters the Undercliff. The mean annual temperature is 51.35° ; that of spring 49.66° , of summer 60.63° , of autumn 53.58° , and of winter 41.89° .

Ventnor, the principal place on the Undercliff, is situated at the base of St. Boniface Hill, which, rising eight hundred feet, effectually shields the town from the north and north-east winds. The houses are partly built on the lower slopes, but also extend down to the water's edge. It is as a mild winter resort that Ventnor has become so celebrated, and there are few English localities which can compete with it in this respect. Nothing along this sea coast will bear comparison with it, and Torquay is the only place on the south-west coast which can compete with it. But with a temperature nearly the same, the climate of the Undercliff being so dry is less relaxing than Torquay, and is indeed in some degree tonic and bracing. During the coldest winters the temperature at Ventnor exhibits hardly one degree of diurnal variation, and there are only two degrees difference between the readings here and those of the South of France. There is an erroneous idea that Ventnor is exceedingly hot in the summer, which is not the case, as the obstacles which afford shelter in winter also lessen the sun's power in summer. For several hours during the longest days the sun is hidden from Ventnor by the lofty hills, and consequently the absorption of heat is less. A person may walk both in the morning and in the evening sheltered from the summer sun by the heights of the Undercliff. This, together with the

prevailing summer sea breeze, is the reason why, on an average of twenty-five years, the maximum reading of summer heat was ten degrees less than at Greenwich. On the other hand, the seasonal inclination of the sun gives the locality the full benefit of the winter rays. The early spring season, when easterly winds prevail, is the most unfavourable period for invalids, but is still more favourable than the same time at most other places. The climate of August and October is more relaxing than at other periods, and then Sandown is preferred by many persons. Taken altogether, however, the Undercliff, and especially the Ventnor climate, is peculiarly well suited for chest and throat affections, also for most chronic ailments from which Anglo-Indians suffer. The tropical invalid can scarcely do wrong by wintering in this locality. For those requiring tonic mineral water, there is a chalybeate spring near Black Gang Chine.

There is good sea bathing and a fine pier at Ventnor, also good roads for those not able to go far. To the convalescent the neighbourhood presents many attractions. The beauty of the Bonchurch cliffs and village, and of the Undercliff at Niton, the foot of St. Catherine's downs, is notorious. The hills and downs present many numerous pedestrian excursions, while Carisbrooke, Freshwater, and Cowes, are within a day's journey.

Sandown is situated on a beautiful bay, having a dry sandy soil, good drainage, pure and abundant water, open sea, fine beach, and good bathing ground. The air is more bracing than that of Ventnor, and is preferred by many during the autumnal months. The invalid may readily change from one of these places to the other.

Worthing is about twelve miles west of Brighton, and has a full southern aspect. It is sheltered by the Southdown hills, and is cool in summer and warm in winter. The only objection is occasional north or north-east winds, which, notwithstanding the protection afforded by the downs, sometimes render the air very bleak. But the climate is so mild that myrtle and fig-trees grow to perfection. The rainy days are fewer and the quantity of rain less than in the West of England. There are extensive sands, affording good sea bathing, and ample scope for exercise. The town is very cleanly, the streets broad and well drained, and there is a long esplanade. The surrounding scenery is also picturesque. Worthing is better suited to tropical invalids than Brighton. Lung disease, hooping cough, scrofulous affections, rheumatic and kidney disorders, are usually much benefited.

INDEX.

ABE

Aberystwith, 147
 Abu, 8
 Abbottabad, 7
 Aix-la-Chapelle, 83
 Aix-les-Bains, 84
 Alderney, 159
 Algiers, 84
 Almorah, 12

Baden-Baden, 89
 Bagnères de Bigorre, 91
 Bagnères de Luchon, 91
 Bareges, 93
 Bath, 148
 Biarritz, 94
 Bocklett, 107
 Bordighera, 125
 Bournemouth, 153
 Brighton, 152
 Buxton, 155

Cabins, separate, for the sick, 71
 Cairo, 99
 Cannes, 131
 Carabacel, 130
 Carlsbad, 94
 Cashmir, 14
 Cauterets, 93
 Channel Islands, 156
 Cherra-Poonjee, 65
 Cheltenham, 159
 Chill, dangers from, 5
 Chini, 69
 Cimiez, 130

EDI

Cintra, 109
 Clifton, 156
 Climate, distinctions of, 1, 75, 144
 — of England, 144
 — of Scotland, 182
 — of Ireland, 167
 — of India, 3
 — of Indian hill ranges, 1-2
 — of Indian sea coasts, 70
 — of the ocean, 72
 — of India, inimical to Europeans, 4
 — European, how selected, 75
 — Indian, how selected, 2
 — change of, dangers from, 5, 75
 — change of, to be supplemented by regimen, 6, 77
 Clothing to be suitable, 5, 79
 Coonoor, 58
 Como, 96
 Conigliano, 122

Dalhousie, 22
 Darjeeling, 23
 Dawlish, 161
 Dharmasala, 28
 Diet to be studied, 78
 Dinan, 96
 Dover, 162

Eastbourne, 163
 Eaux Bonnes, 93
 Eaux Chaudes, 93
 Edinburgh, 182

EGY

Egypt, 98
 Ems, 104
 Eugadine, 137
 English, imprudence of the, 78
 Europe, time for return to, 75
 European climates, 74

 Filey, 163
 Franzensbad, 105

 Genoa, 121
 Guernsey, 157

 Harrogate, 165
 Hammam R'irha, 89
 Hastings, 163
 Health resorts in India, 1
 — resorts abroad, 74
 — resorts at home, 144
 Homburg, 105

 Indian hill stations, division of, 1
 — — — temperature of, 6
 — — — diseases of, 6
 — — — value of, 3, 6
 Invalids, tropical, types of, 80, 81
 Ilfracombe, 166
 Ireland, 167
 Isle of Wight, 188

 Jersey, 158

 Khandalla, 29
 Kingstown, 168
 Kissengen, 107
 Kotagiri, 56
 Kreuznach, 108
 Kusowli, 34

 Landour, 46
 Lanowli, 33
 Leamington, 168
 Lisbon, 108
 Llandudno, 169

SAR

London, 170
 Luxor, 104

 Madrid, 109
 Mahableswar, 35
 Malaga, 110
 Malvern, 172
 Margate, 176
 Maricnbad, 111
 Marine Sanitaria, 70
 Matlock, 177
 Matheran, 40
 Medical treatment, importance of, 6
 Melcombe Regis, 187
 Mentone, 126
 Mineral waters, 79
 Monaco, 128
 Murree, 44
 Mussoorie, 46

 Naini Tal, 50
 Naples, 112
 Nice, 129
 Nile voyage, 102
 Nilgherries, 55

 Ootacamund, 59

 Pachmarhi, 62
 Pau, 114
 Pegli, 122
 Penzance, 178

 Queenstown, 167

 Ramsgate, 179
 Riviera (The), 116
 Rome, 132

 Sandown, 191
 Sanitaria, hill, 1
 — marine, 70
 San Remo, 122
 Sark, 159

SCA

Scarborough, 180
 Scotland, 182
 Shillong, 64
 Ships, sanitation of, 72
 Sidmouth, 183
 Simla, 65
 Sirinagar, 16
 Southport, 184
 Spa, 135
 St. Leonards, 163
 St. Moritz, 137
 Suez, 102
 Sun, exposure to, at hill stations, 5
 Sunawar, 34

 Temperature of Indian hill sta-
 tions, 5, 6
 — — — plains, 4
 — how affected, 76
 Tenby, 184
 Torquay, 185

ZUL

Tropical invalids, types of, 80, 81
 — — localities suited for, 81, 82
 Tunbridge Wells, 187

 Undercliff, 188

 Venice, 138
 Ventnor, 190
 Vichy, 139

 Weymouth, 187
 Whitby, 188
 Wiesbaden, 141
 Wildbad, 142
 Worthing, 192

 Zulmarg, 19

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